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BUSINESS SHORT CUTS

IN

Accounting	Advertising
Book-keeping	Correspondence
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*Compiled by
The Board of Experts of
The Book-Keeper and
Business Man's
Magazine*

PUBLISHED BY
The Book-Keeper Publishing Co., Ltd.
DETROIT, MICH., U. S. A.
1904

Entered According to Act of Congress
in the year 1904, by

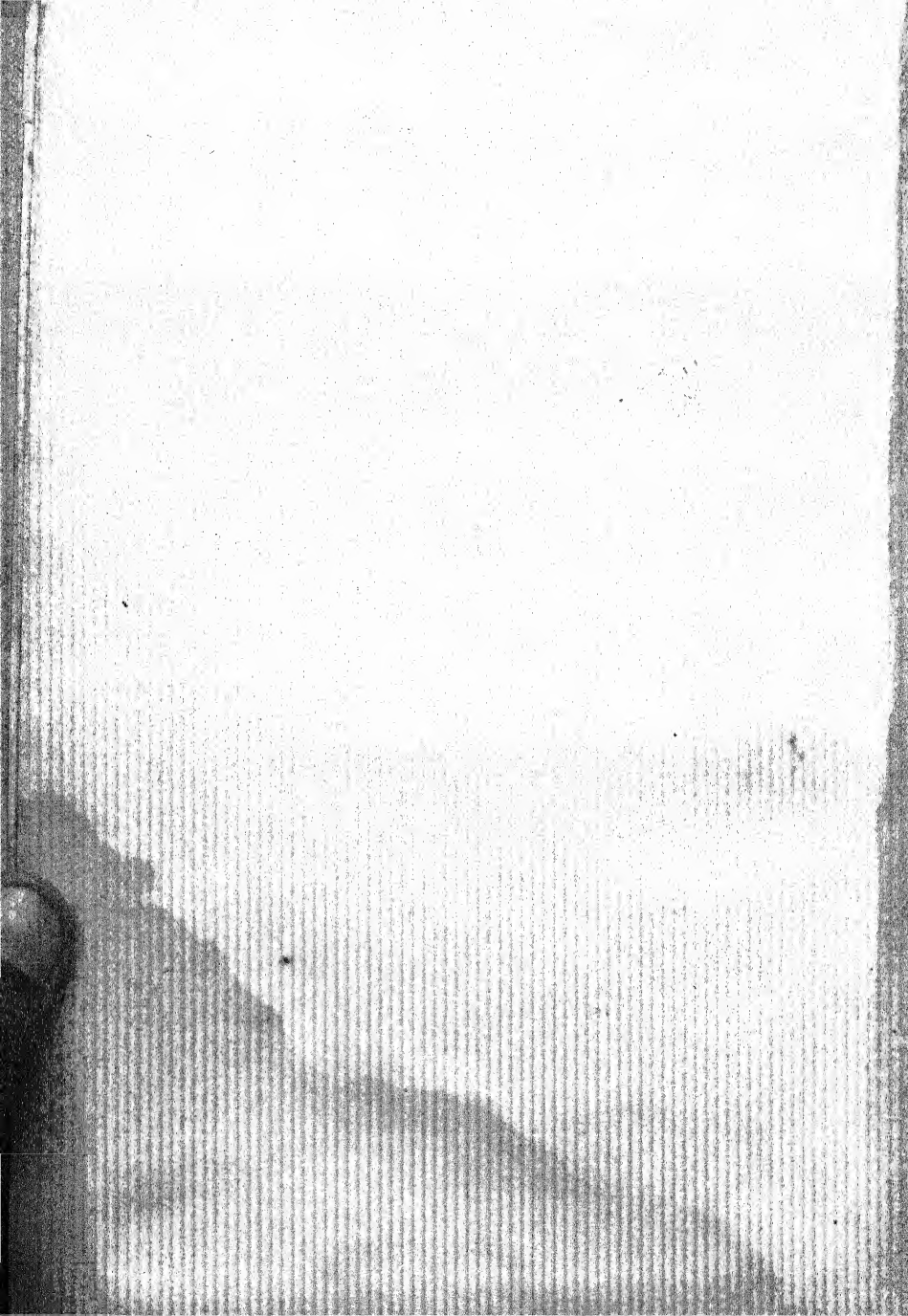
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DETROIT, MICHIGAN

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DEDICATED
TO THE
OFFICE MEN OF AMERICA
WITH THE HOPE THAT
THESE LITTLE
HINTS AND HELPS
WILL MAKE IT
EASIER

—The Board of Experts.



BUSINESS SHORT CUTS

Rules for Locating Errors in Trial Balances.

1. Look carefully through the Trial Balance to see if a balance has been omitted, or has been entered on the wrong side.
2. Do not look through your postings to see if you can find the amount of the error unposted, unless you think you are familiar with such an amount. The required difference is generally made up of two or more errors.
3. Divide the amount of the difference by nine. If it is so divisible, it is probably a transposition or a slide; and in the latter case the posting to be looked for can be ascertained by the following process: Amount of error, $\$43.56 \div 9 = 4.84 \div 11 = 44$. Look for \$44.00 posted as 44 cents. This error is called a "double slide."
4. If the difference is \$18.00, look for \$42.00 posted as \$24.00; \$31.00 posted as \$13.00; \$35.00 posted as \$53.00, etc.
5. If the difference is \$27.00, look for \$47.00 posted as \$74.00; \$14.00 posted as \$41.00, \$36.00 posted as \$63. etc.
6. If transpositions do not apply, look through the ledger for a balance omitted from the trial balance.
7. Look for an account closed but not ruled off, so that last month's balance has been taken again this month.
8. If the difference is an even number, it may be a debit posted as a credit, or a credit posted as a debit.
9. If the difference is 1 cent, or 10 cents, or \$1.00, the error is almost certain to be in addition or subtraction in drawing off the balances.
10. Check the footings of the trial balance, and the carrying of the totals to the recapitulation sheet.
11. Scan the folio columns of all books of original entry to see if any posting has been omitted.

12. See that you have not forgotten to include in the trial balance the balance of cash account.

13. Look for some small account ruled off during the month to show a balance, but no balance brought down.

14. Carefully check over your sundry accounts receivable, and notes receivable accounts, as these two accounts are prolific sources of error.

15. If all these efforts to locate the difference are fruitless, check the additions of the ledger accounts, and the drawing off of the balances.

16. Proceed to check the postings as follows: On a sheet of paper take off from the ledger the credit postings of cash, using a separate column for each week. Foot the columns, ascertain the grand total, and compare it with the total called for by the cash book.

17. If the totals do not agree, compare the totals by weeks in order to locate the difference.

18. If the totals agree, draw off the debit cash postings in like manner.

19. Also the journal debit postings and credit postings.

20. If these all agree, draw off the postings to the ledger from the sales book, and compare total with total of sales book.

21. It is supposed that the cash book and journal are self-proving so far as footings are concerned, but if the totals of postings from the sales book and the total of the sales book footings differ, the footings must be checked.

22. If a purchase book, or any other auxiliary record is kept, treat it in the same manner.

23. During the above checking process the error, or errors, must inevitably be located, and it is quicker and surer than checking individual postings, especially if the postings are "called off" to the book-keeper.

24. Also the error may be located in the cash book, or whichever book may be checked first, which will obviate the labor of checking anything else.

25. The above method of detecting errors is based on the supposition that the book-keeper keeps his ledger in good order, and distinguishes his postings from different books. If the book-keeper is a careless man, no rules are any good to him, and he must be left entirely to his own devices.

26. In drawing off the above analysis of the ledger, check each amount with a different colored pencil for each book from which postings are made. This greatly facilitates the detection of errors, and enables the book-keeper to keep exact track of what he is doing.

27. THE PREVENTION OF ERRORS is more important to the book-keeper than their detection when made. The following rules will be found efficient and satisfactory:

28. Divide your ledger into alphabetical, or territorial, sections, as may be most convenient.

29. Have your cash book and cross-entry journal ruled with separate columns for each section.

30. Have your sales book ruled with separate columns for each ledger section.

31. In taking off your trial balance put down debits for the month in one column, credits for the month in another column, and the balances in a third column.

32. Foot all these columns and get separate totals for each section of the ledger.

33. We will suppose that the ledger is divided as follows: City (A-K), County (L-Z), Creditors, General.

34. Add together totals of cash debit column, city; journal credit column, city, and the result should equal total of city section of ledger credits.

35. Add together sales book debits, city; journal debits, city; cash book credits, city (if any), and the result should equal total of city section of ledger debits.

36. The other sections of the ledger will be checked in like manner.

37. Thus the ledger can be easily proved in detail. An error can be at once located in the particular section in which it occurs, and quickly traced.

38. Make a check mark in folio column against items not to be posted. Where the lines are left blank, it frequently happens that a ledger folio is placed on the wrong line, and a wrong amount consequently posted.

39. If a difference occurs, the dollars and cents of which when added together make 18, cut off the cents, add 1 to the dollars and this amount will generally be found to be posted as dollars instead of cents, and vice versa.

40. If a sales book is used containing a credit column for returns and allowances, carefully note that all credits have been entered in the proper column.

41. Where order blanks are used errors are very liable to occur in the recapitulation made for the purpose of obtaining the total to post to the credit of sales account.

42. Where a book-keeper is unable to induce his employer to procure for him columnar cash books, journals, and sales books, I would recommend him to employ the Slip System of Reverse Posting, as by this means he can attain the same end.

43. Let him prepare a sheet of paper ruled with columns as described above and place it on his desk at the side of his ledger.

44. When he posts a city sales debit to the ledger he will then also post the amount in the column provided for the purpose on his sheet of paper.

45. The advantage of this method is that the work can be proved each day without taking off the balances from the ledger.

46. By this method, at the end of the month the book-keeper has **ONLY ONE DAY'S WORK TO PROVE** instead of the work for the whole month.

47. The trial balance can therefore be obtained before leaving the office on the last day of the month.

A FEW RULES FOR LOCATING ERRORS ON SPECIALLY RULED ACCOUNT BOOKS, ETC.

49. On columnar cash books and journals look for amounts which should have been entered in special non-

posting columns, but which have been entered in a ledger column and not posted.

50. On Safeguard ledgers look for balances which have been transferred without a journal entry.

51. Where ledgers are separated into sales, purchase, and general ledgers, look for sales which have been posted to accounts in the purchase or general ledgers.

52. Where the Goldman check figure is used look for double slides as described in Rule 3.

53. Also look for transpositions like the following. \$425 posted as \$524.

54. Last, but not least. Remember that a little care in posting will balance ten nights' work put in to find the error.

General Rules for the Detection of Transpositions of Dollars and Cents.

SOME pointers showing how to find if an error is the result of a transposition of figures, and if so to determine what the figures are which have been transposed.

All errors, where the figures when added together amount to 9 or nines, may be a transposition of figures and unless the amount is as above stated, then we may be certain it is not a transposition. Take the sum of \$31.50. The 3 and 1 and 5 equals nine. The question therefore is: What amount posted into the wrong columns would produce this error?

Rule: Divide the error by 9, and the quotient is the only amount that could produce the given error that way.

To explain: \$31.50 divided by 9 is \$3.50, and \$35.00 posted as \$3.50 would show a difference of just \$31.50, and therefore we would look for 35 posted into the wrong columns. This kind of an error is quite likely to occur—generally, however, with *one* figure instead of three. It may happen in footing any column of the

ledger or any of the books posted into it, or even in footing the trial balance.

Suppose, for instance, that the ledger footing of debits showed \$54.00 *too much*, 5 and 4 are 9, which shows it may be a transposition.

Now for the figures that have been transposed: \$54.00 divided by 9 is 6, and as the ledger has too much posted to it, \$6.00 has been posted or footed as \$60.00.

There is another kind of transposition where *both* figures have been transposed.

For instance, take this same error of \$54.00 too much again, to find what figures being both transposed will produce it.

Rule: Divide the error by 9, and the quotient is equal to the left hand figure, less the right hand one.

Now \$54.00 divided by 9 equals 6, therefore 71, 82 or 93, are the only numbers of two figures, where the left hand figure exceeds the right hand one by 6; if the error (\$54.00 over) is produced by both figures being transposed, we may be certain it is one of the above changed from 17, 28 or 39; but if the ledger footing, instead of being too much had been found to be too small, then the greater number has been transposed to the smaller one. In case there is a transposition of *three* figures, then the *middle* figure of the error will *always* be a 9, and the two *outside* figures will, when added together, *always* amount to a 9. Thus 125 transposed is 521, the difference is 396, and that is the *apparent* error.

Now to find the *real* error, pay no attention to the *middle* figure, but place the first and last figures together thus: 36, and dividing by 9, we have 4, and then if the error is an excess, or too large we know that the *true* error, or the real figures which have been transposed, are such that the left hand figure exceeds the right hand one by 4 and must be 51, 62, 73, 84 or 95, but the quickest way to find the error is to look through the books we have posted from for a number having three figures, and the left hand one exceeds the right one by 4.

TRANSPACEMENT OF FIGURES.

Rule to find whether an error is, or is not caused by posting dollars into the cents column, and if so, how to find the dollars that have been posted in this way.

Rule—First. All of the figures of an error of this nature, when added together will make a 9, or multiple of 9. If they do not it is certain it cannot be an error of this kind; if they do, it is almost equally certain it is.

Example: \$71.00 posted 71 cents—error \$70.29, added together equals 18 which is a multiple of 9.

Second—To ascertain the amount in dollars that *will* make the error, when posted (as shown in the example.) Take the cents of the error from imaginary ciphers, and the remainder *will* be the dollars that have been posted wrong.

ILLUSTRATION.

\$71.00 posted 71 cents, error \$70.29, equals 18.	
Deduct from ciphers00
the cents of the error	70.29

Therefore	\$71
has been posted 71 cents.	

\$93.00 posted 93 cents, error \$92.07, equals 18.

.00
92.07
<hr/> \$93.

has been posted as 93 cents.

\$81.00 posted 81 cents, error \$80.19, equals 18.

.00
80.19
<hr/> \$81.

has been posted 81 cents.

\$60.00 posted 60 cents, error \$59.40, equals 18.

.00
59.40
<hr/> \$60.

has been posted 60 cents.

How to Detect Transpositions.

It is somewhat surprising to learn that a list can be made of no less than 504 transpositions of two and three figures, besides possibilities of double and indirect transpositions which appear to be almost unlimited.

It is comparatively common to hear of cases where \$10 has been posted as 10 cents (this is a transposition,

\$10.00 being posted as 00.10), \$1.18 as \$1.81, or 59 cents as 95 cents, but few of us have ever considered the possibility of the transformation of 6453 into 3456.

A difference divisible by 9 infers a transposition. That such a difference does not necessarily indicate this class of error may be illustrated by the example of posting \$10.90 as \$10, being an omission of 90c. In this case the book-keeper would probably waste considerable time looking for \$1 posted as 10c, \$5.40 as \$4.50, etc.

This indicates that in some cases it is impossible to distinguish transpositions from omissions.

The rules governing the detection of transpositions in British book-keeping are so different as to excite interest in the student of mathematical curiosities. The "wonderful figure nine" cuts no figure in the business, substitutes being found under varying conditions in the figures 19, 11 and 30.

The examples furnished by our correspondent follow:

£.	s.	d.
14	11	0
11	14	0
2	17	0

In the above transposition the error would be £2 17s.

In all transpositions of pounds and shillings, the addition of pounds and shillings of the difference is 19.

The above is $2+17=19$.

To find error reduce to shillings £2 17=57 shillings. Divide 57 by 19 which gives 3. Look for an item of which one amount is three higher than the other.

In the above 14 is 3 higher than 11.

s.	d.
8	3
3	8
4	7

In the above transposition the error would be 4s. 7d.

In all transpositions of shillings and pence, the addition of the shillings and pence of the difference is 11.

The above is $4+7=11$.

To find error reduce to pence 4s. 7d.=55 pence. Divide 55 by 11 which gives 5. Look for an item of

which one amount is 5 higher than the other. In above 8 is 5 higher than 3.

£	s.	d.
7	6	2
2	6	7
4	19	7

In the above the pounds, shillings and pence are transposed.

In such cases the addition of the pounds, shillings and pence of the difference will amount to 30.

The above thus $4+19+7=30$.

In such transposition the shillings are always 19.

To find error reduce to pence 4. 19. 7.=1195 pence.

Divide by 239 which gives 5. Look for item of which the pounds or pence is 5 higher than other.

In above 7 is 5 higher than 2.

Labor Saving Method for Obtaining Trial Balances.

CUSTOMERS' LEDGER.

ENTER only page number and amounts in the trial balance, and instead of taking totals of debits and credits, or the balance of each account, take merely the amounts posted during the month. In this way dormant accounts are ignored and the actual work of the month is proved. The trial balance in this way will show the total debits and credits for the month, and will be agreed with the total debits and credits posted to the Customers' ledger controlling account carried in the general ledger. The advantages of this plan may be summarized as follows:

1. I find that it insures accuracy, as very little adding or subtracting is necessary.
2. I find that it saves nearly 50 per cent of time, as all accounts not active during the month, are easily passed over, the eyes searching merely for the month in the date-column, instead of comparing debits with credits, therefore more resting to the eyes.

3. Absolute proof that proper amount of debits and credits have been made.
4. It proves the addition of special columns bearing any relation to Customers' ledger.
5. If an error exists, it points out whether debit or credit or both and gives you the exact amount of such error or errors.
6. It proves that the proper month has been entered in the date column of any charge or credit.

Lightning Addition.

A RECENT work on Higher Arithmetic says: "In computing, book-keepers whose business leads to rapid addition, omit much that would seem necessary to the ordinary student, and not infrequently add two columns at once, a power gained only by practice in their profession." It is undoubtedly the aim of every book-keeper and office man to attain a high rate of speed in addition, coupled with accuracy, and various methods have been devised to facilitate both speed and accuracy. While methods for effecting accuracy will be considered under the head of "check figure," etc., those which relate to attaining speed in addition may appropriately be considered here.

The most common method used and recommended by experts in this line is the learning of combinations of figures, so that $9+8+7$, for instance, will be read as 24 by one operation of the mind. Thus, in reading, we do not say $O+N+E$ equals ONE; neither should we say $9+8+7$ equals 24.

Numerous tables have been prepared to aid the student in making himself thoroughly familiar with the various combinations of numbers, and in Soule's Philosophical and Practical Mathematics are given extensive drill tables which should be found of great assistance. Drill tables are also constructed on cards, each card bearing a combination of two or more figures. By shuffling and reshuffling these cards the drill exercises are con-

and reshuffling these cards the drill exercises are constantly varied, which is certainly an advantage over printed tables where the relative position of the combinations never changes.

The dropping of tens is also frequently used by experts who keep account of the tens dropped in a column with the fingers of the left hand. It requires considerable practice to become efficient with this device, and at first the frequent miscalculation of the number of tens dropped will be apt to discourage the student. Another method of dropping tens which will perhaps be better for beginners to use is to place a dot against the figure where the ten is dropped. Thus:

$$\begin{array}{r} 4 \\ 5. \\ 6 \end{array}$$

Another method in considerable favor is the grouping of figures above 10 and under 20. By this method $8+7$ becomes $10+5$. While this particular principle does not appear to be entitled to much credit in single column addition, there is no doubt of its usefulness in double column addition. In the following example the operator adds both columns by the following process:

$$\begin{array}{r} 46 \\ 83 \\ 27 \\ 34 \\ 76 \\ \hline 266 \end{array}$$

$$46+80+3+20+7+30+4+70+6$$

which he reads: 46, 126, 129, 149, 156, 186, 190, 260, 266.

Proficiency in this method will soon enable the student to add double columns without separating each number as above shown, the mental process becoming practically instantaneous.

*American State
Manufacturing Co*

No. 11438 Chicago, Ill. _____ 190____
FIRST NATIONAL BANK
to the order of _____ \$ _____ Dollars
President _____ Treasurer _____
Received in Settlement of Account as under noted
Date _____ 190____
Signed _____
Sign here and endorse on back
If Account does not agree with yours
settle at once. Don't make any
alteration or correction.
DANAS ARE CAUTIONED NOT TO RECEIVE THIS CHECK UNLESS PROPERLY SIGNED

Labor Saving Method of Recording Bank Deposits and Check Withdrawals.

THIS method entirely does away with the check stub and check register, and the book may be described as a bank cash book.

The checks are handsomely lithographed showing the trade-mark and firm name, also containing a voucher record which must be properly signed, otherwise, the bank upon which check is drawn will not accept it. These checks are printed four or five in a pad, padded at the bottom—numbers running from top to bottom, thus rendering it very easy to draw checks as you can draw four or five without having to detach them each time.

The cash book is ruled in order to show the distribution of the various accounts of the checks drawn, also showing any deduction, as discount, etc., and the net amount of check together with check number. These numbers are put in from time to time using a numbering machine in order to have same uniform and clear and distinct.

As soon as the check is drawn, the entry is made in the cash book opposite the number of the check, and proper distribution of the amount drawn is made. Footings are always made when cashier has drawn the checks. For instance, he draws fifty checks at once: the footings will be made at the end of the fifty, or if he draws one check, the new footing will be carried down. The total footings appears in red ink for the debits and black ink for the credits on the credit side, and red ink for the credits and black ink for the debits on the debit side.

Receipts are entered as soon as received;—the total of each day or of each mail being carried out into the deposit column. Deposit is made daily or every other day, and it is very easy to check these against the bank book at the end of the month.

You will note from sketch that ruling is designed to

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[illegible][illegible]

show the different accounts credited less whatever deductions are made by the remitters. The difference between the amount of the deposit column on the debit side and the amount of the check column on the credit side, always shows the bank balance, so that the management, at any time, can look into the cash book and find this balance carried out at the side. Also just what remittances are coming in and what checks are being paid and notice how the amounts are distributed.

At the end of the month, the totals of the different columns are posted to the various accounts in the general ledger without making journal entry.

This system is now taking care of between four and five hundred checks a month and the larger the business, the more time is saved in the entries and convenience of having everything in the one book.

In case accounts are kept with different banks, it would be a very simple matter to enlarge the cash book so as to provide columns on the debit and credit side for the deposit items sent to the different banks and to take care of the checks as drawn, and showing the numbers. These checks, of course, can be the same with the exception of having them printed on different colored paper and showing the name of the different banks.

The cash book we are describing, contains five hundred pages, size 14x17, leaving wide binding space.

Method Devised for Record of Instalment Collections.

WHERE instalments are to be collected a card is made out, as per example, giving in convenient form the lease, date, number, name, address, deposit, and promised weekly payment, also in pencil the amount of merchandise charged. Payments are put down by the collector as made and reported each day to the book-keeper. It frequently happens that payments are made at the office, and for convenience of finding the card in the collector's bunch a hole is cut in the side

Sept. 11, '03

#11111

Friday

C.V.R.R.

John J. Smith

1000 First St., N L

\$7.00 \$1.00 per week 31.25

Sept. 18. E. B

1.00

Collectors Card-Specimen.

Sept. 25- will pay \$2.00 Oct 1st

in a certain position which signifies the initial of the customer's name, both side edges of the card being reserved for these alphabetical indexes. The top edge of the card is reserved for similar cuts, referring to the north, south, east and west quarters of the city, the bottom edge cut in indicating various surrounding towns. These cuts are preferable to projecting tabs, for the reason that such tabs would break off in the collector's pocket.

An Up-to-Date Cash Book.

THE accompanying illustration of cash book embodies several features which seem to have some degree of merit.

As in the customary form of cash book, columns are provided for the accounts requiring frequent entries. However, in the form shown, accounts receivable is omitted and discount on sales and amount received are used for entering payments made by customers. The net amount received and the discount allowed for any item are posted separately to the proper account in the sales ledger. Whether or not a certain customer takes advantage of discounts is something a credit man often wishes to know. The information can be gotten directly from the personal account if the above method of posting is used. As much as possible, ledger accounts should show on the face the proper relation of the different transactions involved. A system which does not provide for this lacks an essential feature. When the cash book is balanced the two columns mentioned are footed and the same total is posted to the credit of accounts receivable in the main ledger.

On the credit side a similar plan is adopted with accounts payable. The net amounts paid and discounts allowed are posted to the proper accounts in the purchase ledger. When the voucher system is used the method is still the same. The details of any item may be secured from the voucher register. The sum of the two footings

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Cash Received

[illegible]

Cash Paid.

Bank Withdrawals	Sundries	Int. and Discount	Coll. and Exchange	Expense	Bills Payable	Amount Paid	Disc. on Purch.	Details	Name	Date
7/1								Voucher # 192		
7/6	623.00					623.00				
7/8	175.00									
7/10										
7/10	150.00									
						361.23	361.23	Disc. on Pur. Vouchers Pay.	Cr. A1	
						4163.12		Bills Pay.	Dr. 52	
						1163.18		Expense	Dr. 11	
						672.81		Coll. and Ex.	Dr. 4	
						14.10		Int. and Disc.	Dr. 15	
	2121.15	32.15				32.15			Dr. 31	
						2121.15				
						4102.81		Balance		
						1143.4431				

is posted to the debit of accounts payable, or vouchers payable as the case may be.

Accountants generally agree that the bank account should be closely allied to the cash book, and various arrangements have been suggested from time to time by which this combination might be made advantageously. The form presented herewith seems to unite the two very acceptably, and should work well in practice. It will be noticed that the money columns are in one block, the bank account occupying the middle part. This is made possible by placing date and explanation columns on the credit side to the extreme right. It is desirable that the bank account occupies contiguous columns since deposits and withdrawals are compared constantly and should not be too widely separated. A column is also provided for the bank balance by the use of which the book-keeper has before him at all times the exact condition of the bank account. It is scarcely necessary to explain the use of the three columns. The amount deposited at any time must always agree with the total of cash received since the last deposit, less any discount or exchange. Cash paid out is extended to the withdrawals column, the balance on hand appearing in the proper column. The bank account is practically a duplicate of the work on the stub of the check book, and the two are easily compared. Errors are avoided which would otherwise be hard to discover. Furthermore, the cash items on both sides of the cash book are traced very readily to the bank account and thus an intimate relationship between the two accounts is established.

When the cash book is balanced the amount on hand should be the same as the bank balance added to any cash which is in the cash drawer at that time.

In carrying out these suggestions, the work of the book-keeper is not increased to any great extent, while, at the same time he has at a moment's notice correct information concerning any feature of the cash account.

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November 2 nd 1903						
date	Name and address	Notes	Am't	Interest	Disctd	Balance paid
1903	Peter Pearson Trust Co	L	1000	80		
1903	Mr. H. Brown 1009 Mt	"	3000	150		
1903	Ed. Bush Spencer Co	N	10000	600	10600	
1903	Mary Shannon 922 Dean	L	2500	75		2575
1903	E. C. Adams Dapton	"	1500	90		
1903	M. G. Elmer 644 Lynnd	"	2500	300		2800

Labor Saving Methods of Keeping Instalment Accounts.

HAVE three copies made of the lease, making provision thereon for the instalments, date of payments, and balance due.

One of these leases would go to the customer, one to the collector, and one to be put in a loose leaf binder as the office record. The collector can file his form in a chronological index, filing it ahead to the day when collection should be made. When collection is made he enters the amount on both his and customer's copy, putting down date of payment, amount, and balance due. It might be well, perhaps, for the collector to note on his and customer's copy, the date when next payment should be made. On collector's return to the office, he turns in the money and leases upon which he has collected. Proper record is made in cash-book and credits entered on the office lease or record. When payments are completed, the office lease can be removed from the binder and filed either numerically or alphabetically, or in any other suitable way. If two kinds of filing of collected leases would be desired, the collector's lease could be filed in one way and the office lease in another.

Our next illustration is of a book ruled like a four inch column cash book, one being provided for the business of each year.

Two or more pages are allowed for each business day in the year, the date being written at the top of the page.

When a lease or note comes into the office an entry is made for each payment falling due, under the corresponding date in this tickler. On one line the name and address of purchaser, amount of payment, and interest on payment are entered. These payments are carried through as many years as lease runs. A tickler for 1906 is now in use. In this way all payments falling due are always listed. Notices are sent from this book, which contains all information regarding each payment, with-

out reference to the ledger. In this business collections are made, as far as possible, by correspondence, but a collector would find his list made out on this book.

When a note is discounted the amount is carried out in the third column of this book, and when an account is canceled or paid before maturity the amount is carried into the fourth column. The sum of the footings of the two last columns, taken from the sum of the two first columns gives exact sum which should be paid into the business every day.

Labor Saving Method for Keeping Accounts Receivable in an Ice Business.

EACH driver delivering ice has a regular route. After the season is fairly opened, so that he knows who are to be his regular customers, a list is made in the order in which he calls upon them. A copy of this list is inserted in his "slate," a metal frame holding the

Name										No.	Street
May	June	July	Aug.	Sep.	Oct.						
			1				Remarks	Driver	Route		
			2								
			3								
			4								
			5								
			6								
			7								
			8								
			9								
			10								
			11								
			12								
			13								
			14								
			15								
			16	etc. etc.							
Dr.			Cr.			Bal.					

lists and ruled slips on which he enters the weights of ice delivered to each. Upon his return to the office the weight slips are taken from the slate and blanks inserted

for the next day. The book-keeper takes from his card ledger the group of cards representing the route and posts the several weights to the proper cards in the space provided for that day. On these cards, as will be seen by the printed form here given, there is one space for each day for six months. The month columns are headed May to October, a period which covers most of the retail ice sales. For those customers who take ice during the other months of the year the card is turned over. The other side is the same as this excepting the month headings which read from November to April. At the end of the month the weights are footed, and the value of the ice delivered is entered in the space below headed "Dr." Then monthly charges are listed and the total charged in the journal to accounts receivable. When collections on these accounts come in they are entered in the cash book and the separate credits posted to these ledger cards. At the end of each month the total of the accounts receivable column in the cash book is passed to the credit of the accounts receivable account. The balance of this account is occasionally verified by a trial balance of the card ledger.

Special Form for Customers' Ledger.

BY the method hereunder described a central column is provided which, instead of recording the outstanding balances of an account at any particular period, records the amount of debits covered by various settlements of account.

Let us consider the object of an account in the sales ledger; its needs, and the best way to attain the required results.

As the ledger is not an original book of entry, but a convenient form of showing each customer's indebtedness, a page completed should not so much show the total balance outstanding, as each particular item of debit and credit still open. Therefore any arrangement enabling us to ascertain the condition of an account, quicker than

BUSINESS SHORT CUTS

Date	Disc	Date Due	Debits	Central Airt. Column	Date	Colls	Cash	Disct.	Retirents etc
1942 Jan 1	0%	3/11	375 07		Jan 11		1216 11	91 52	10 00
"		3/13	942 56		15		232 80	17 50	
3		"	65 73		10				
4			184 57	1367 93					
5		3/15	832 26	952 20	Mar 15		846 00	54 20	32 26
6		3/16	847 05		" 20		1930 75	123 23	
7		3/17	1206 83	2053 90					
10		3/20	843 27						
12		3/22	686 05						
16		3/25	76 29						

by the methods in common use, is a desirable improvement.

Many of the card systems, now used, show the entire balance due each month. This is of but little use, as very few customers settle month by month; the majority of payments being made to cover one bill or a group of bills.

This conceded, it would seem that our object should be to devise the ledger page, so as to show at a glance the actual condition of an account, without bothering with amounts already canceled by previous payments.

The aim of the Central Amount Column is, to avoid long additions, to keep the records in compact form by grouping the credits directly opposite to the debits involved, and to balance as often as possible.

The idea consists of adding to the usual rulings of the ledger, a central amount column placed between the debits and credits, and of dividing the credit side into three columns, viz.: cash—discount—allowance or returns.

Whenever a consecutive number of debit items, beginning from the top, are balanced by amounts in the cash discount or return columns, the total is extended in the central amount column, thus balancing the account to that date.

In the example it will be observed that the first group is not balanced until payment of January 15th. The first settlement made January 10th only equaled the third and fourth debits, therefore amount could not be extended in central amount column before the first and second items were paid.

In this first group the consecutive debits from the top amount to \$1,567.93, so do cash, discount and returns, consequently the account is closed to that total.

As the above example stands, the customer owes \$843.27, \$926.05 and \$76.29, viz., the only items appearing below the cross line.

If a red ink line is drawn under each amount in the

central amount column, you are able to see at a glance how the account stands; any figures below the red line are open and those above closed. The time required to draw the red lines, is more than made up by not having to write by cash, by discount, by credit, etc.

As each payment is directly opposite to the items covered by it, the information regarding promptness of settlement is apparent. No forwarding necessary. When a page is completed, keep right on until a section is made.

No large columns to add in making your trial balance, simply the figuring of live items. Another feature is, that if an error occurs in your balance you are almost certain that it is not in posting from the cash book, as each payment has equaled the corresponding debits.

Figuring Percentages.

THE practice of figuring percentages of indirect expense on gross sales is very often quite misleading. The particular point is that the profit on some kinds of goods in some departments of a business is much greater than the profit on other lines in other departments. If, therefore, the general expense is based on gross sales the department making a large profit has to bear a much larger relative proportion of indirect expense than the department making a less profit, while at the same time the latter department may actually require more supervision and attention from the general offices than the former.

Percentages should, in our opinion, be based on turnover. We have illustrated turnover on several previous occasions. It is obtained by adding inventory at commencement of period to purchases and productive labor, and deducting inventory at close of period. The result represents the cost of the goods sold.

Percentages based on amount of sales must necessarily be variable, depending on the ratio of profit added to make selling price. Percentages on cost will not fluctuate with the fluctuations of profit, and will therefore

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[illegible]

be much more reliable and absolutely fair under all conditions to all departments.

One of the advantages of basing percentages on turnover is that by this method any general reduction of profit as compared with the quantity of goods sold is immediately detected and an opportunity afforded to intelligently trace the cause of difference.

Efficient System for Handling Drafts.

APPENDED are examples of letters to slow customers on whom drafts have been made, and illustration of draft register. Draft is made through bank at city in which debtor lives, and is followed up once a week until letter No. 6 has been sent, when the account is placed in the attorney's hands for collection.

When the draft is paid, the date of payment is entered in the date column provided in front of the amount column.

LETTER NO. 1.

Gentlemen: Enclosed please find statement of your account, which is past due. We are making draft for the amount through Bank. Kindly honor same when presented, as we have instructed the cashier to return the draft to us if not paid within five days after the same has been presented. We sincerely hope you will give the draft your personal attention and oblige.

LETTER NO. 2.

Much to our surprise, we have heard nothing from our draft, although the cashier was instructed to hold the same not longer than five days. If the amount is not correct, according to your books, we should be pleased to know just where the difference is. If the amount is correct, we would like an explanation why our draft is not honored. Thanking you for giving this your prompt attention, we remain.

LETTER NO. 2½.

(When it is time to send the next letter after the first one, if draft has been returned unpaid—same will be marked "Ret." on draft sheet—send letter No. 2½ instead of 2. If draft has not been returned, send letter No. 3.)

Much to our surprise, our draft made on you has been returned to us unpaid. If the amount is not correct according to your books, we should be pleased to know just where the difference is. If the amount is correct, we would like an explanation why our draft is not honored. Thanking you for giving this your prompt attention, we remain.

LETTER NO. 3.

On the inst. we wrote you with reference to our account, which is due. Not having heard from you with reference to the same, we write to know if you intend paying this account. Thanking you for a prompt reply, we remain.

BUSINESS SHORT CUTS

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[illegible]

LETTER NO. 4.

We again call your attention to our account, which has not been paid. You surely must have overlooked this matter, and we ask you to kindly send us a check for the amount due us by return mail. The profits on our goods are not large enough to warrant our carrying this account any longer.

LETTER NO. 5.

Just one month ago, we made a draft upon you for past due account,—the same was returned to us unpaid. We have written you repeatedly asking you to send us the amount due us, and you have given us no good reason why this account has not been paid. We must now insist upon a check by return mail for the amount due us.

LETTER NO. 6.

We have been very patient with you regarding your past due account, but have decided to place the same in our attorney's hands for prompt collection unless we have a check from you for the full amount due us before next Saturday.

Labor Saving Card Ledger System.

THE system hereunder described is that used by a large savings bank, but the principle may be conveniently adapted to the requirements of any business, where the number of customers' accounts is very large and sectionalization necessary so that several book-keepers may be employed on the work.

In this case the accounts are divided into sections of 10,000 accounts each, a book-keeper being appointed to each section. A separate tray is provided for each 1,000 accounts (see illustration), so each tray really constitutes a separate ledger, each book-keeper controlling ten ledgers. The illustration of the book-keepers' desks shows in the foreground a section containing ten trays or sub-sections.

The cards are indexed by number and the guide cards are made with large projections for convenience of the book-keepers in quickly securing any desired card. These large projections on the guide cards give numbers in tens. The small projections on the ledger cards give units from 1 to 9; thus, to find account 493433 look for guide 49343 and following card 3.

Expense Adjustments.

MANY book-keepers have on their books charges in respect to expenses paid in advance, and there are also liabilities not entered in the books in respect to expenses incurred but not paid. When making a balance sheet the proper method is to establish a reserve account for liabilities, and a suspense or adjustment account for advance payments. In some businesses these two accounts are amalgamated under the heading of "adjustment" account, the balance being entered on the balance sheet as a liability or an asset, according to circumstances. Insurance, taxes, etc., are usually paid in advance, and there are frequently a number of small expense bills for which it is not considered advisable to open accounts but which are nevertheless actual liabilities of the business.

These accounts are extinguished when the regular charges are made on payment of bills, while reserves on account of advance payments are transferred to the debit of the regular accounts by journal entry in reopening the books.

This method is commonly adopted for the reason that it is supposed to be desirable that the balance sheet should represent assets and liabilities actually appearing on the ledger, but a large number of business houses simply make the adjustments on the balance sheet itself and do not go to the trouble of creating the adjustment accounts on the ledger.

Rule for Finding Real Discount.

THE following rule will enable the reader to compound any two:

From the apparent total of two trade discounts subtract 1-100 part of their product, and the remainder will be the real discount equivalent to the two.

Take 20 and 10. The apparent total discount is 30, from which subtract 1-100 part of 20×10 or 2. The result is 28.

Again take 28 and 5. The apparent total discount is 33, from which take 1-100 part of 28×5 or 1 2-5. The result is 31 3-5, the real discount before shown. A little practice will enable the reader to compound either mentally or by pen a series of trade discounts.

It may be necessary to compare trade discounts at a glance to see which is the more advantageous. In the case where the apparent discounts of two series differ, I believe that the series with the greater apparent discount will have the greater real discount.

In the case with the apparent discounts of two series, the same as 10, 10 and 10 for one series, and 20, and 5 and 5, the other series, it will be found that the more the discounts of a series approach equality, the less the real discount; and that the more the trade discounts are concentrated into a single discount, the greater the real discount.

From what we have said it will follow that 10, 10 and 10 are less than 20, 5 and 5.

There may be cases in which we cannot tell at a glance. In this last case we must calculate the real discounts by the rule given above.

A Few Pointers About Checks.

BANK checks possess many advantages for the conduct of business, and are used to a proportionately great extent. They are in nature but orders for the payment of money, and are payable in the order in which they are presented. As given in the usual course of business, they do not constitute payment of the indebtedness for which they are given until paid. Nor will the concurrent receipting of the debts for which they are given change this. If they are not paid on proper presentation, resort may be had to the original claims. The rule is different in this respect as to certified checks. So the having of checks certified constitutes payment as to the persons drawing them.

Checks should be dated. If not dated at all, and

they do not contain any statement as to when they are to be paid, they are never payable. They may be ante or post-dated, as well as dated on the day of delivery. By being ante-dated they may be made to cover prior transactions, and in a measure determine the relative rights of the parties to them, provided that no fraud is intended or done. Post-dating in the main determines the date of payment.

When post-dated so as to fall due on Sunday, they are payable on the following Monday. Checks post-dated or maturing on legal holidays should be presented the day following. When post-dated checks are paid before the dates mentioned, the money paid on them can be recovered. If blanks are left for the date, the holders of checks are thereby authorized to insert the true dates of delivery, but no other dates, and if they insert any other date it makes the checks void. Changing the date of checks without consent of the drawers will do the same.

The presumption is that when checks are drawn, funds will be provided at the banks on which they are drawn to meet them, but presentation for payment must be made within a reasonable time. If not so presented, the holders will be charged with any consequent loss. When persons receiving checks and the banks on which they are drawn are in the same place, they should be presented the same day, or, at the latest, the day after they are received. Where they are in different places, the checks must be mailed to some bank or person at the place where payable before the close of the day following any receipt, and the latter must present them before the close of the banking hours on the day following the receipt there; no extra time will be gained by holders depositing checks in their own banks for collection.

After duly presenting checks, it is also the duty of the holder, if they are not paid, to notify the drawers before the close of the next secular day following the

presentation and dishonor. No particular form of notice is required. It may be written or verbal. The principal case in which losses occur from failure to use due diligence in the collection of checks is where the banks on which they are drawn fail in the meantime. If the banks continue solvent, the drawers will remain liable to pay their checks for months at least after they are drawn. Presentation and notice of dishonor will also be dispensed with where there are no funds to pay checks, and where the banks on which they are drawn suspend payment before they can be presented, using proper diligence. After receiving checks, they must be presented for payment, unless such presentation would be useless before the original claims can be sued on. For, by accepting checks, there is an implied agreement to use that method of procuring the money for which they are drawn.

When checks are negotiable and pass by indorsement or delivery, the same degree of diligence will be required of each person to whom they are indorsed, in order to hold those indorsing them, as is required of original payees to hold original drawers of checks. But by putting checks in circulation, the liability of the drawers cannot be prolonged. They must be presented within the same time by indorsees as by payees.

To Ascertain What Amount Invested Will With Interest Added Amount to a Given Sum in a Specified Time.

By the provisions of a will \$17,032 was bequeathed to three brothers, to be so divided that, being invested at 5 per cent simple interest, the three should receive equal amounts at the age of 21 years. What sum should the executor invest in each case, the ages being respectively 12, 15 and 16 years?

F. S. SIMS.

Let

ALGEBRAIC SOLUTION.

X equal the share to be received by the brother aged 12 years.

Y equal the share to be received by the brother aged 15 years.

Z equal the share to be received by the brother aged 16 years.

Then

$$X + Y + Z = 17,032. \quad (1)$$

Now as the inheritance of "X" is to be invested for nine years at 5 per cent per annum, it will earn 45 per cent during the period until he is 21 years of age, and the amount he will receive at 21 will be \$1.45X.

Likewise "Y," lacking 6 years of 21, will receive when of age \$1.30Y; and "Z" lacking 5 years of 21 will receive when of age, \$1.25Z. But as they are each to receive equal amounts when of age, we may construct the following equations:

$$1.45X = 1.30Y \quad (2)$$

$$1.35Z = 1.30Y \quad (3)$$

Reducing equation (2) we get

$$X \quad 130Y \quad 26Y$$

$$\underline{145} \quad \underline{29}$$

and from (3)

$$Z \quad 130Y \quad 26Y$$

$$\underline{125} \quad \underline{25}$$

Substituting these values of X and Z in equation (1)

$$26Y \quad Y \quad 26Y \quad 17032$$

$$\underline{29} \quad \underline{25}$$

Multiplying all the terms of the equation by 725 in order to eliminate fractions.

$$650Y + 725Y + 754Y = 12348200$$

$$2159Y = 12348200$$

$$Y = 5800$$

$$\text{As } X \quad \frac{26Y}{29}$$

$$X = 5200, \text{ and } Z \text{ will be } 6032.$$

ARITHMETICAL SOLUTION.

From a careful consideration of the problem it is evident that if the "present worth" of one dollar can be found, for the time existing between the present ages of the three sons and when they should each arrive at majority or 21 years—it would be the basis of the proposition into which the inheritance should be divided.

BUSINESS SHORT CUTS

Following the simple rule of finding the "present worth" and indicating the division by fractions instead of carrying the figures out to unsatisfactory decimal places, we have the following fractions, representing the proportion into which the inheritance should be divided:

	$\frac{100}{145}$	$\frac{100}{130}$	$\frac{100}{125}$	reducing these
to their least common denominator we	$\frac{1300}{1885}$	$\frac{1450}{1885}$	$\frac{1508}{1885}$	
have				now,

as fractions having a common denominator are to each other as their numerators we have the following proportion, viz.: 650. 725. 754., these added together makes 2129—which represents the total inheritance—17,032—and each son's share is as follows:

12 years of age.....	$\frac{650}{2129}$	$\times 17032 = \$5,600.00$
15 years of age.....	$\frac{725}{2129}$	$\times 17032 = \$5,800.00$
16 years of age.....	$\frac{754}{2129}$	$\times 17032 = \$6,032.00$
		<hr/> \$17,032.00

Some Arithmetical Short Cuts.

I.

The complement of a number is the difference between it and the unit of the next higher order.

98— —2 (Complement) Thus the complement of 98 is 2;
94— —6 (Complement) of 94 is 6; of 987 is 13, etc. To

9212

multiply these two numbers, multiply the complements, 2 and 6, and place the product 12, in the answer. For the remaining two figures, subtract across, either the 2 from the 94, leaving 92, or the 6 from 98, leaving 92.

2.

Suppose you want to find the value of 128 yards at 75 cents. Now to find the value of any number of yards of cloth at 75 cents a yard, or any number of articles at 128 75 cents each, deduct one-quarter of the number 32 from itself and call the remainder dollars. At one dollar a yard the answer would be \$128; then at \$96 75 cents it must be three-quarters of this, or one-quarter less. At 87½ cents deduct one-eighth. At 66 2-3 cents deduct one-third.

3.

To multiply numbers, such as 37 by 43. Here the mean number—that is, the number which is as much greater than 37 as it is less than 43—is 40. Forty squared, or multiplied by itself gives 1600. The square of 3, the difference between the mean number and one of the numbers is 9. 1600—9, 1591, the product of 37 and 43. Apply this rule to 87 by 73, 63 by 57, 22 by 18, 1009 by 991, 116 by 124. The entire work should be done mentally.

4.

If you wish to multiply two large numbers, each of which is a little over 1,000, such as 1,235 by 1,003, multiply the excesses; that is, 235 by 3, carrying the product 705, three places to the right. Then add the numbers, omitting one of the ones at the left. Apply this rule to such numbers as 1,312 by 1,003, 1,199 by 1,005, etc.

5.

MULTIPLICATION BY SUBTRACTION.

Instead of multiplying by 9, we multiply by 10 and subtract the number from this product

$$8435625 \times 9 = 84356250$$

$$8435625$$

Product

$$= 75920625$$

to multiply by 99, add two ciphers and subtract; to multiply by 999, add three ciphers and subtract, etc.

6.

ADDING FROM RIGHT TO LEFT.

8516
7493
2658
6390
<hr/>
23847
121
<hr/>
25057

Foot the first column to the left and place the total 23 as shown in example. Foot the second column from the left, which amounts to 18. Place the 8 on the same line as 23, and place the 1 underneath the 3. Foot the third column amounting to 24, place the 4 on the same line as the 2, 3, 8—place the 2 underneath the 8. Foot the last column amounting to 17—place the 7 on the first line and the 1 underneath the 4. Then add these two lines, which will give you the total footing.

7.

To multiply numbers of two figures each where the left hand figures are the same and the right hand figures add to 10 (as 34×36). To obtain the product multiply 4 by 6 and put down 24, carry 1 to the left hand multiplier, multiplying 3 by 4 and putting down 12. This rule applies to the following numbers of two figures each, and also to the following examples of three figures each:

12	13	14	15	
18	17	16	15	
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
21	22	23	24	25
20	28	27	26	25
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
31	32	33	34	35
39	38	37	36	35
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
41	42	43	44	45
49	48	47	46	45
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
51	52	53	54	55
59	58	57	56	55
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
61	62	63	64	65
69	68	67	66	65
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
71	72	73	74	75
79	78	77	76	75
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

81	82	83	84	85
<u>89</u>	<u>88</u>	<u>87</u>	<u>86</u>	<u>85</u>
91	92	93	94	95
<u>99</u>	<u>98</u>	<u>97</u>	<u>96</u>	<u>95</u>
112	113	114	115	116
<u>118</u>	<u>117</u>	<u>116</u>	<u>115</u>	<u>114</u>
129	132	133	134	135
<u>121</u>	<u>138</u>	<u>137</u>	<u>136</u>	<u>135</u>
392	393	401	792	996
<u>398</u>	<u>397</u>	<u>400</u>	<u>798</u>	<u>994</u>

8.

This rule also applies where two figures of one product are the same, while the two figures of the other product add to 10 (as 33×37):

22	22	23	22	22	22
<u>73</u>	<u>64</u>	<u>55</u>	<u>28</u>	<u>82</u>	<u>37</u>
22	22	22	33	33	33
<u>91</u>	<u>19</u>	<u>46</u>	<u>73</u>	<u>37</u>	<u>82</u>
44	55	66	77	88	99
<u>91</u>	<u>82</u>	<u>73</u>	<u>64</u>	<u>46</u>	<u>28</u>

9.

The rule also holds good where the addition of any two of the numbers equals the addition of the other two; or where the addition of three of the numbers amounts to the same as the fourth number.

18	13	14	28	17	24
<u>24</u>	<u>31</u>	<u>22</u>	<u>10</u>	<u>26</u>	<u>18</u>
48	23	21	21	22	23
<u>18</u>	<u>19</u>	<u>48</u>	<u>67</u>	<u>46</u>	<u>44</u>
23	24	39	24	26	36
<u>61</u>	<u>34</u>	<u>24</u>	<u>42</u>	<u>31</u>	<u>26</u>
48	46	69	42	63	84
<u>26</u>	<u>27</u>	<u>27</u>	<u>29</u>	<u>29</u>	<u>29</u>
31	31	32	32	48	34
<u>68</u>	<u>97</u>	<u>66</u>	<u>94</u>	<u>34</u>	<u>62</u>
26	68	64	96	93	41
<u>42</u>	<u>36</u>	<u>38</u>	<u>38</u>	<u>39</u>	<u>88</u>
42	43	46	86	63	84
<u>86</u>	<u>84</u>	<u>61</u>	<u>47</u>	<u>48</u>	<u>48</u>
82	98	96	12	88	62

49 68 66 26 55 97

10.

This rule also applies to numbers of three figures each, or where the multiplicand contains three figures and the multiplier two. It also holds good in respect to some fractional numbers.

128	146	136	328	246
<u>94</u>	<u>77</u>	<u>86</u>	<u>88</u>	<u>49</u>
105	147	246	168	164
<u>143</u>	<u>124</u>	<u>127</u>	<u>181</u>	<u>283</u>
43	53	62	84	92
<u>121</u>	<u>151</u>	<u>242</u>	<u>143</u>	<u>186</u>

11.

Another rule is, where the left hand figures add to 10 and the right hand figures are the same, in which case instead of carrying 1, one of the unit numbers is added to the product of the left hand figures (as 6 multiplied by 6 equals 36; 8 multiplied by 2 plus 6 equals 22) 2236.

26	25	24	23	22	21
<u>86</u>	<u>85</u>	<u>84</u>	<u>83</u>	<u>82</u>	<u>81</u>
27	28	29	31	32	33
<u>87</u>	<u>88</u>	<u>89</u>	<u>71</u>	<u>72</u>	<u>73</u>
34	35	36	37	38	39
<u>74</u>	<u>75</u>	<u>76</u>	<u>77</u>	<u>78</u>	<u>79</u>
41	42	43	44	45	46
<u>61</u>	<u>62</u>	<u>63</u>	<u>64</u>	<u>65</u>	<u>66</u>
47	48	49	51	52	53
<u>67</u>	<u>68</u>	<u>69</u>	<u>51</u>	<u>52</u>	<u>53</u>
54	55	56	57	58	59
<u>54</u>	<u>55</u>	<u>56</u>	<u>57</u>	<u>58</u>	<u>59</u>

12.

In the following examples the rule is modified, as double the unit figure should be added. When the sum of the tens is 20 three times the number should be added; when the sum of tens is 30, three times the unit number should be added.

133	134	135	136	137
<u>73</u>	<u>74</u>	<u>75</u>	<u>76</u>	<u>77</u>
142	143	144	145	146

62	63	64	65	68
151	153	154	157	159
51	53	54	57	59
192	193	195	197	191
48	43	45	47	41
183	184	185	186	188
23	24	25	26	28

Sectionalization and Controlling Accounts.

SOME book-keepers in these progressive days desire whenever possible, to have a record of stock of goods, or products, in such a shape that they may at any time be able to ascertain the amount of inventory on hand. Numerous methods have been devised with this object in view, based on the keeping of stock books, or stock records, wherein all goods received are debited to the respective accounts to which they belong, and all goods sold credited at cost, the difference being supposed to be the value of the stock on hand. It must be perfectly clear to everyone that these stock records could be most accurately kept, and yet at the same time someone might be stealing a part of that stock every day, and the theft would not be discovered (except accidentally) until the actual inventory was taken, and the result of such inventories compared with the amounts called for by the stock record. Notwithstanding this fact, nobody ever thinks of taking inventory every day, or every week, or (with few exceptions) every month. As a rule, inventory is not taken oftener than once every three months. It is taken far more frequently once every six months, and usually once a year. In the same way, if the totals of the ledgers can be proved and the work of the book-keeper shown to be accurate so far as figures are concerned, there seems to be no good reason why the book-keeper should be called upon each month to draw off all the individual balances, or, in other words, take inventory of his accounts receivable in order to prove in that way that his work is correct. In a bank it is particularly necessary to prove the accuracy of the debits and credits

Cash Received

[illegible]

City Sales Ledger

Dr		City Sales Ledger				Cr	
Date		Blio	Debits	Debit Balance	Date	Blio	Credit Balance
Jan 1	Balance						
31	Journal	51	27535 60	18926 50	Jan 31	125	16095 75
	Cash	126	18 75	28288 85		51	1596 25

to the customers' accounts each day, because if a posting is omitted it is quite possible the bank will suffer serious loss the next day. This does not apply to the general run of commercial businesses, but no system can be claimed to be exactly suitable to the requirements of every commercial enterprise, and the method we here advocate is only expected to be used where the circumstances are favorable. When a book-keeper posts a credit to the wrong account, and sends his statement showing a correspondingly larger debit balance to the customer who sent the check, it does not usually take that customer long to notify the house of the error, and the only method of preventing such errors is by checking back the postings, which we believe is only done in very exceptional cases.

If, therefore, we know that the totals of the individual balances in the City sales ledger, for instance, amount to a certain sum, why should the book-keeper be called upon to take inventory of his accounts each month in order to verify that sum? This is particularly true where the duties of the book-keeper and cashier are separate, as in this case there can be no temptation for the book-keeper to tamper with the accounts receivable.

In order to carry out the method we suggest it is necessary to have separate ledgers for the separate classes of accounts, or to keep the separate classes of accounts in different sections of the ledger. The more the accounts are sectionalized the easier it is to prove them and to obtain a trial balance.

In the illustration headed "cash received" it will be noted that the ledgers are divided into four sections, each section to be proved separately. The sections are Country sales ledger, City sales ledger, Purchase ledger, general ledger. In the general ledger will be opened a controlling account with each of the other ledgers as per illustration headed "city sales ledger," which represents the account in the general ledger with the City sales ledger, and the balance shown of this account represents the total of the individual balances contained

in the City sales ledger. This account is opened by charging it with the total of the individual balances drawn off from the City sales ledger, or the city sales section, on December 31st. A separate column for this ledger, or section of ledger, is then provided in every book from which postings are made to that ledger. At the end of the month the totals of these columns in the books from which postings are made are posted to the debit or credit of this account, as shown on illustration headed "city sales ledger."

It will be noted that in the illustration the books of original entry are shown to be only cash and journal. It is supposed for the sake of this illustration that the total of the sales is carried through the cross-entry journal.

The total amount of sales and journal entries charged to this account will be found to be accurate if they agree with the total amounts shown on the monthly recapitulation sheet. Thus, the City sales ledger columns on the monthly recapitulation sheet will show on the journal debit side \$27,535.60, which is the amount of the ledger postings. You thus have the same amount (\$27,535.60) coming from the ledger as being posted, and coming from the journal and sales book as having been entered there, which is a complete check on the accuracy of the posting. In like manner the cash charged to this account is compared in the same way with the total of the cash debit column for the City sales ledger on the monthly recapitulation sheet. The credits to City sales ledger account are agreed in the same way, and the outstanding individual balances, amounting to \$28,288.85, are then incorporated in one amount in the trial balance, which is made up entirely from the few accounts kept in the general ledger, and which trial balance can as a rule be easily completed in less than one hour, especially if this system of check is also applied to the postings to that book.

When the time comes to take inventory of these individual balances in the different ledgers, the safest plan (and frequently the quickest in the end), is to draw off

total debits, total credits for the period, as well as the balances. If a difference should be found this method will enable the book-keeper to locate the error on either the debit or credit side of the ledger in which it occurred, which will be found a great saving of time.

It sometimes happens that a debit intended for a customer in the Country sales ledger is charged to a customer in the City sales ledger. This mistake is traced not only by the total debits and credits compared with the totals of the sales ledger accounts, but will also be located by the monthly recapitulation sheet, and this method thus to a certain extent will check posting of amounts to a wrong account.

If one's employers, or the officers of the company by whom the book-keeper is employed, object to a trial balance being taken off at any other interval than once a month, this advantage still remains—that a correct financial statement can be furnished on the first of the month and the individual balances drawn off at leisure from the ledgers for comparison with the total balances shown on the individual ledger accounts carried in the general ledger.

The Reverse Posting System.

THE question of obtaining a daily check on the work of the book-keeper is a subject of constant thought to him. We have scarcely ever found one who did not desire to find some practical way by which he might rid himself of constant suspense as to the accuracy of his work and how his trial balance is going to come out. Numerous suggestions have been made, and many methods have been tried with this end in view, such as, for instance, the check figures 9, 11, 13, 19, 101, etc., etc. There is no doubt that some book-keepers can use the check figure with such facility that it makes no appreciable difference in the amount of work they are able to perform in the course of a day. At the same time it has been amply demonstrated that no check figure is infallible,

and there are a number of transpositions which they will not detect.

There is also a very laborious method of providing special columns in the ledger for drawing off daily balances of accounts. These daily balances are supposed to fulfill the two-fold purpose of allowing the principal, or credit man, to find the balance of an account at any time without computation, and to facilitate the drawing off of a trial balance by the book-keeper at any moment when he may be required, or think it desirable to do so. The number of publications which have been offered to book-keepers on this subject is legion, but most of them are founded on certain well-known lines, and in fact it must be apparent to all that there is no royal road to obtain a trial balance.

DR *Cash Book* *Reverse Posting System*

Amounts	Amounts	Amounts	Amounts	Amounts

Similar slips to be used for debit and credit sides of every book from which postings are made.

It is quite possible that a large number of the readers of this article may have been long acquainted with the majority of the systems referred to, but the object of this work is to explain what the authors consider to be the most efficient and practical method of obtaining a daily check on book-keeping work, and getting a trial balance without drawing off the individual balances. It is true the method here recommended involves a certain amount of extra labor, but it is absolutely efficient if ordinary care is taken by the book-keeper.

We first call your attention to the illustration here following, headed "Cash Book."

You will notice that this illustration is also marked "Reverse Posting System." A slip similar to this should

be provided not only for the debit and credit sales of every book from which postings are made, but also for the debit and credit postings to each ledger used; thus, if the customers' ledgers are sectionalized, being divided, say, into Country sales ledger and City sales ledger, there should be a separate slip provided for both debit and credit sides of the Country sales ledger and the debit and credit sides of the City sales ledger.

The book from which postings are made should, whenever possible, be placed on the left-hand side of the ledger, and the slip should be placed on the right-hand side of the ledger. The reason is this: After the amount has been posted from the original entry to the ledger, and entered on the slip, the eye travels back to the book from which the posting has been made. It, therefore, necessarily crosses the posting in the ledger, so that the book-keeper can note automatically that the amount on the slip is the same as the amount in the ledger.

After the postings from any book of original entry have been completed, the amounts entered on the slip should be footed and compared with the total of the amount shown in the book of original entry as having been posted. If the two totals agree, you will know that the work so far as the figures are concerned is accurate, and that the books are in balance. The instructions above given pre-suppose that the sales for the different ledgers are kept separate, either by using separate books or separate columns, as otherwise the check cannot be so easily applied.

This system will not, of course, prevent the book-keeper from posting an amount to the wrong account, nor do we know of any practical system which could be devised for that purpose.

At the end of the month the totals of the various slips should be carried to the monthly recapitulation sheet as per illustration shown on page 50 and the totals of the columns on this monthly recapitulation sheet should equal the totals of the books of original entry which they represent, thus completing the

check on the month's work. Thus the book-keeper using this method will be enabled to check his work day by day as he goes along, and at the end of the month, instead of having a month's work to check, he only has one day's work to check, and this will be checked during the day as he works from the different books of original entry.

NOTE.—If the book-keeper has a Beach calculating machine he will find it a great advantage to use instead of the slips, as he will thus be saved the labor of adding the totals, the machine accomplishing this automatically.

This system is also much used in banks as per the following description:

A proving paper is used, simply being a sheet with four columns on it arranged for recording from right side to the left the credits, the debits, the present balances and the former balances. Of convenient size for ready handling, this sheet is laid on the ledger just where you are posting, and as soon as you have made the entries on the ledger, the requisite figures are speedily copied on it from the ledger, the whole force of the proof consisting in the fact that it is a duplicate of what appears on the ledger. If an error has been made on the ledger, by carelessly subtracting a deposit, or adding a withdrawal, or a mistake in addition or subtraction, the actual figures appearing on the ledger are copied down on the proof paper and it will be wrong also, and the existence of a mistake in the work, and the amount of it too, will be noted as soon as the four columns on the proof paper are footed up and a balance struck.

The balance between credits and debits should be the same as between present balances and former balances, and on the same side of the sheet; and if it is not, then there is an error in the work, and you are immediately notified of it (by reason of the discrepancy) and can proceed at once to locate and correct it. If these two balances are the same, you know that your work has been done correctly, and you need not turn again to your accounts to assure yourself of that fact.

By analyzing this proof a little closer it shows:

The total of column number one on the right equals the total of the deposits of the day; and the total of column number two equals the total of the withdrawals of the day; so we are assured that we have posted all of the day's transactions on the ledgers. (For convenience, and so that several book-keepers may be at work at the same time, we divide the work into sections, corresponding with the ledger; and each section can be dealt with by itself, but the principle remains the same.) From the proof obtained from columns three and four we are assured that we have increased or decreased our balances on the ledger, as the case may be, correctly.

Suppose we are posting from a journal, a sales book, and a cash book.

Our Purchase Book footing is	\$1,579 75
Our Journal Book footing is	7,031 31
Our Sales Book footing is	1,203 05
Our Cash Receipts	9,539 47
Our Cash Expenditures	3,154 24
Amount of Accounts closed	2,694 64

Our trial balance, with items, as here shown, is out

\$43.56.

TRIAL BALANCE.

Cash	\$14,061 58	\$ 3,154 24
Proprietors		11,271 64
Expense	425 00	
Mdse.	3,888 55	3,797 55
Bills Receivable	225 00	
Heustis	294 25	
Haywood	62 50	
Taylor	44	
White	452 05	79 75
Leach	219 00	
Foskett	131 25	
Hall		1,500 00
	<u>\$19,759 62</u>	<u>\$19,803 18</u>

To find on which side of the trial balance this error is, or what part of it is on each side, we proceed as follows:

Add together footing of previous Trial Balance	\$00,000 00	\$00,000 00
Journal footing	7,031 31	7,031 31
Purchase Book	1,579 75	1,579 75
Sales Book	1,203 05	1,203 05
Cash Receipts and Expenditures	9,539 47	3,154 24
Items posted from Cash Book	3,154 24	9,539 47
	<u>\$22,507 82</u>	<u>\$22,507 82</u>
Deduct amount of closed accounts	\$ 2,704 64	\$ 2,704 64
The correct footing of the Trial Balance should be	\$19,803 18	\$19,803 18

We find, therefore, that the credit side of our trial balance is correct, and that the error is \$43.56, and this is the difference between our footing of the debit side of the trial balance and our footing of the proof. The most likely way in which this error could occur is either a transposition of figures, or the posting of dollars for cents.

If the error is one of dollars posted as cents, then the dollars and cents of the error added together will be 99. To locate the error, omit the cents, add 1 to the dollars, and the sum will be found posted as cents when it should be dollars, or vice versa. Glancing over our trial balance, we find that we have a debit of 44 cents against Taylor, and referring to his account in the ledger we find that the debit should be \$44. The difference between \$44 and .44 is \$43.56, or our error.

Labor Saving Method for Sundry Accounts.

THE form illustrated (p. 56) is a combination invoice, collection record, and petty ledger. The blank at the right of the perforation is the invoice which is made in duplicate. The original goes to the customer, and the duplicate constitutes the petty ledger, being filed in alphabetical order.

The blank at the left of the perforation is used as the collection record, containing date of sale, name and address of customer, and date when collection should be made.

General Ledger.

THE accounts with customers being eliminated, it is an easy thing to take a trial balance from the general ledger. Take footings of both debits and credits of all accounts whether they balance or not, entering the amounts in the trial balance. The totals of the trial balance will then equal the amount of the previous trial balance plus amounts posted during the month, and to verify the accuracy of these totals add to the previous totals the amounts posted during the month, taking

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DEALERS IN

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Loader-

Sold to

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[illegible]

Labor Saving Sundry Accounts Form—(see page 55)

the footings from the various books from which postings have been made, as the following form will illustrate (no account with cash being kept in the ledger), viz.:

	Dr.	Cr.
Footings of trial balance May 31.....	\$100,000 00	\$100,000 00
Deduct cash on hand May 31.....	500 00	
Actual ledger totals.....	\$ 99,500 00	\$100,000 00
Journal postings for June.....	40,000 00	
Cash Book postings for June.....	25,000 00	40,000 00
Balance cash on hand.....	1,000 00	\$5,500 00
New footings of trial balance June 30.....	\$165,500 00	\$165,500 00

When entering footings from cash book, it must be borne in mind that these items in detail have been posted to the opposite side of the ledger and the totals should therefore so appear in the proof form.

A Simple Interest Formula.

INTEREST may be very easily understood and computed by what might be called the Rational Method. The method has a great advantage in following the same line of reasoning by which pupils solve such questions as, "What is the cost of 2 bu. 3 pks. 1 qt. 1 pt. of beans at \$1.75 per bushel?"

In that way it makes interest but a continuation of other subjects, instead of an entirely new subject with a new system of computation.

The rule is stated as follows: Find interest on principal for one year at given rate; reduce months and days to the decimal of a year; multiply the interest for one year by the number of years.

For example: Find the interest of \$750 for 2 yrs. 9 mos. 18 days at $4\frac{1}{2}$ per cent.

Divide 18 days by 30 and reduce to a decimal.

$$\begin{array}{r} 30 \overline{)18.0} \end{array}$$

$$\begin{array}{r} .6 \text{ month.} \end{array}$$

Divide 9.6 months by 12 and reduce to a decimal,

$$\begin{array}{r} 12 \overline{)9.6} \end{array}$$

$$\begin{array}{r} .8 \end{array}$$

\$750X.045 gives interest for 1 year = \$32.75.

Multiply \$32.75 (interest for one year) by 2.8 (years) = \$94.50.

Interest on \$2,875.75 for 3 yrs. 7 mos. 17 days at $5\frac{1}{2}\%$.

$17 \div 30 = .567$ month.

$7.567 \div 12 = .63$ year.

Multiply \$2,875.75 by 5.5 = x.

Multiply x by 8.63 = interest on \$2,875.75 for 3 yrs. 7 mos. 17 days at $5\frac{1}{2}\%$.

Economical Form of Sales Ledger.

THE form of ledger here illustrated has been devised with a view to overcoming the inconvenience of having an account containing a large number of debit entries and only one or two credit entries, thus wasting a great deal of paper on the credit side.

Sinking Fund Computations.

TO ascertain what annuity payable at the end of each year will amount to a given sum in a stipulated number of years at a stated rate of interest compounded annually:

Divide the interest for one year upon the given sum by the compound interest upon \$1 at the stated rate for the stipulated numbers of years.

Where the annuity is payable at the beginning of each year, proceed as above and divide the result by the amount of \$1 for one year at the given rate.

For example—provide for the payment of \$20,000, payable in twenty years by putting into the sinking fund a certain amount at the end of each year at 3 per cent compound interest, divide the interest for one year on \$20,000 at 3 per cent, which will amount to \$600 by \$0.80612 (the compound interest for twenty years upon \$1 at 3 per cent) and the result is \$744.31, which is the amount to be thus set aside.

If this amount is to be set aside at the beginning of each year, divide \$744.31 by \$1.03 and the result is \$722.63.

A Bond Purchase Formula.

WHAT must be paid for bonds amounting to \$10,000 maturing in ten years with 4 per cent interest, to net six per cent? and give the formula by which you arrive at the figures.

The question does not mention whether interest is to be paid annually, semi-annually, or quarterly, which makes a difference in the result. If annually, the price to be paid is \$8,527.98; if semi-annually it is \$8,512.25.

The process is as follows, at annual interest:

- a. Add to \$1 its net income for one period. $1 \div 1.06 = 1.06$.
 - b. Multiply this by itself till you have used it as a factor as many times as there are periods (10). $1.06 \times 1.06 \times 1.06 \times 1.06 \times 1.06 \times 1.06 \times 1.06 \times 1.06 \times 1.06 \times 1.06$
 - = 1.790847
 - c. Divide 1 by the result of b. $1 \div 1.790847 = .5588948$
 - d. Subtract the result of c from 1. $1.0000000 - .5588948 = .4411052$.
 - e. Multiply this by the difference between the cash interest and the net income ($6 - 4 = 2$). $.4411052 \times 2 = .8822104$.
 - f. Divide this by the net income rate (6). $.8822104 \div 6 = .1472017$.
 - g. This last result is either premium or discount. As the net income rate is larger than the cash interest, it must be discount. Therefore it is to be subtracted from \$1. $1 - .1472017 = .8527983$, which is the value of \$1 on the proposed terms.
 - h. The value of \$10,000 of bonds is 10,000 times as much, or \$8,527.98.
- To prove that this is correct, take the first year's income.
 6% of \$8,527.98, or \$ 511.68
 and from it subtract the cash interest..... 400.00
 and the remainder \$ 111.68
 is the appreciation caused by the bond approaching maturity.
 Add this to 8,527.98

and we have \$8,639.66
 as the value of the bond when it has only 9 years to run.

Again. Compute a year's interest on this principal, and repeat the process, until at maturity the value is found to be \$9,999.99, and the amount paid to redeem it is \$10,000. The odd cent is due to the fact that in the original price about 3 mills were saved to the purchaser at the "nearest cent." You have thus had 6 per cent interest continuously on the amount invested.

The work of multiplying 1.06 by itself 9 times and then dividing \$1 by the product is very tedious. It is immensely shortened by the use of logarithms. Simply take

the logarithm of 1.06, multiply it by 10, subtract that from zero, and search in the book of logarithms for the corresponding number, which is at once found to be .5583948.

Algebraically expressed, the formula is much simpler. Let c represent the cash interest received periodically on each unit of par, r the rate of net income on each unit invested, n the number of periods, then the premium or discount.

Present Value of Bonds.

PROBLEM.—What can I pay for a 6 per cent U. S. Bond maturing in 10 years, so that my investment will yield to me 4 per cent interest payable semi annually?

Rule.—Divide the compound interest on \$1.00 at the required rate for the given time by the regular rate; multiply the quotient by the interest on the bond for one year; to the product add the face value of the bond and divide the sum by the compound amount of \$1.00 at the required rate for the given time.—(B. and S. Com. Arith., page 388.)

Explanation of the Rule.—(a) There are two methods for the solution of problems relating to stock and bond investments, viz., the Simple Interest Method, and the Compound Interest Method. (b) The government uses the Compound Interest Method. (c) This method allows the investment and each payment of interest on the bond to be compounded, at the investor's rate, to maturity. (d) Each payment of interest is compounded at the end of each bond interest interval, while the investment is compounded at the end of each of the intervals agreed upon in contract. (e) If there be no such agreement, the investment is compounded at the end of each of such intervals as are equivalent to a bond interest interval. (f) Whenever the bond interest interval and the investment interest interval are of unequal duration, both are reduced to respectively equal intervals and the interests calculated accordingly. (g) The principle in-

volved in the compound interest method is: Any payment of interest is worth the same interest rate to the investor as he receives from the entire investment. (h) The *final value of the interest* payments at the maturity of the bond is the sum of the compound amounts of the payments at the investor's rate. (i) The *maturity value* of the bond is evidently the sum of the face value of the bond and the final value of the interest payments. (j) Then, in accord with above principles the *investment* is the compound present worth at the investor's rate per interval, of the maturity value of the bond.

A Credit Man's Ledger.

On page 63 is a convenient form of sales ledger where the book-keeper also acts as credit man.

Proof by Casting Out of 9's.

TO cast the 9's out of any number, is to find the excess of the sum of its digits above a certain number of 9's. It is performed thus: Begin at either end of the number and add the digits in order, and when the sum is 9 or more, drop the 9 and add the excess to the next digit and so on, the last excess being retained. For example, to cast the 9's out of 735684, we say 7 and 3 are 10, which is 1 above 9; 1, 5 and 6 are 12, which is 3 above 9; 3 and 8 are 11, which is 2 above 9; 2 and 4 are 6; 6 is the sum of the digits above a certain number of 9's.

Proposition.—Any number divided by 9 will leave the same remainder as the sum of its digits divided by 9.

To illustrate this we will take the number 36745.

$$\begin{array}{rcl}
 36745 = & \left\{ \begin{array}{l} 30000 = 3(10000) = \\ 6000 = 6(1000) = \\ 700 = 7(100) = \\ 40 = 4(10) = \\ 5 = 5 \end{array} \right. & \\
 & & \begin{array}{r} 3(9999+1) = 3 \times 9999 + 3 \\ 6(999+1) = 6 \times 999 + 6 \\ 7(99+1) = 7 \times 99 + 7 \\ 4(9+1) = 4 \times 9 + 4 \\ \hline 5 \end{array}
 \end{array}$$

From this analysis we see that 36745 might be written,

$$2 \times 9999 + 6 \times 999 + 7 \times 99 + 4 \times 9 + 3 + 6 + 7 + 4 + 5.$$

When written in this equivalent form it is at once seen that if it is divided by 9, the only remainder that can occur will come from the division of $3+6+7+4+5$ by 9, that is from the division of the sum of the digits by 9.

Proof for Addition.—Cast the 9's out of the addends, also cast the 9's out of the sum; if the excesses agree, the work is correct.

Proof for Subtraction.—Cast the 9's out of the minuend, also cast the 9's out of the subtrahend and remainder; if the excesses agree, the result is correct.

Proof of Multiplication.—Cast the 9's out of the multiplicand and the multiplier. Multiply the two excesses together and cast the 9's out of the result. If the last excess is equal to the excess of 9's in the product, the work is correct.

Illustration—

876	Excess of 9's in 876 is	3
483	Excess of 9's in 483 is	6
<hr/>		<hr/>
2628	$6 \times 3 = 18$, excess of 9's in 18 is	0
7008		
3504		
<hr/>		
423108	Excess of 9's in 423108 is	0

Proof of Division.—Cast the 9's out of the dividend, divisor, quotient and remainder. Multiply together the excesses in divisor and quotient and cast the 9's out of the result. To this result add the excess of 9's in the remainder, and cast the 9's out of the sum; if the work is correct, this last excess will be the same as the excess of 9's in the dividend.

Illustration—

283) 876345 (3096	
849	Excess of 9's in 3096 is	0
	Excess of 9's in 283 is	4
<hr/>		<hr/>
2734		
2547	$4 \times 0 = 0$, exc. in 0 is	0
	Excess of 9's in 177 is	6
<hr/>		<hr/>
1875		
1698	$0 + 6 = 6$, ex. of 9's in 6 is	6
	Excess of 9's in 876345 is	6
177	remainder.	

The Check Figure Eleven.

WHILE the check figure 11 is not infallible, it is reliable in most cases. An operation of this system may be described as follows:

Take two amounts of five figures each. Starting at the right hand, add the first, third and fifth figures and deduct the second and fourth. If the latter exceeds the former, add 11 and then deduct. The result is the proof figure.

The illustration merely shows that the footing is correct, the footing of the check figures giving the same check figure as the footing of the amounts. But if these amounts are posted to the ledger the same operation will prove the accuracy of the posting.

We will suppose that our book-keeper is enlightened and progressive, and desires to prove each day's work as he goes along, so as to be able to get his balance promptly without trouble on the first day of the month.

He will post from his sales book, or ticket, \$484.26. As he posts the amount in the ledger he extracts his proof figure "4," and writes it in the sales book in a column which he arranges for the purpose.

The proof figure of the footing of the sales book will then prove the accuracy of the postings to the ledger for the day by agreeing with the footing of the column of proof figures in the sales book which represent the postings to the ledger. The same operation will prove the accuracy of the day's postings from the cash book, journal, purchase record, or any other book, so that it is within easy reach of every book-keeper with extraordinarily little trouble to prove each day's work as he goes along, and to be free from all bother and trouble of errors when he endeavors to obtain his monthly trial balance.

In order to make this matter perfectly clear, we append an illustration representing one day's work from the cash book and its proof.

The amounts posted to the ledger from the sundries column of the cash received side of the cash book are represented by the check figures in the check column,

the footing of which is 29, or 9 minus 2 equals 7. The check figure extracted from the total of the sundries column—\$12,578.68—is also “7,” thus proving the postings to be correct for the day. The postings from the sales book, journal, etc., are treated in like manner, each section of the work being thus proved separately and easily.

In entering balances from the ledger into the trial balance book the check figure should be extracted first, and the amount copied from the ledger after. The footing of the check figures will then check the correctness of the amounts in the trial balance book, which have been copied from the ledger, and any errors will be promptly located.

The 12 Per Cent Method of Computing Interest.

THERE is scarcely an instance where the interest in a note or an account, especially when the account is of one item, is desired that it can not be done mentally with a little practice in a fraction of the time ordinarily consumed in figuring it out on paper, or turning to several different pages, jotting down an amount from each one of these pages and finally footing up these amounts for the desired result, as is necessary with all books of interest tables no matter how well the book may be tabulated and indexed. In the ordinary routine of business any amount less than one dollar can be eliminated from the process, except that where the interest is desired on an account of several items maturing at different dates, an average should be struck by treating amounts over fifty cents as one dollar and ignoring lesser amounts. For example: \$234.74 should be taken as \$235 and \$234.26 would be taken as \$234 only. Then by using the 12 per cent method as a basis, the majority of notes and time drafts being for even months and interest on such papers almost universally being a rate of which 12 is a multiple, it becomes merely a matter of simple mental arithmetic. The interest for one month on any amount at 12 per cent is readily seen to be 1 per cent of the principal. For example the interest on \$234.00 for one month

at 12 per cent is \$2.34. By multiplying this amount by the number of months for which the interest is desired, say three months, we have \$7.02, the interest on the principal for the desired time at 12 per cent. Should the rate of interest be 6 per cent simply take one-half of \$7.02 which is \$3.51 the interest on \$234.00 for three months at 6 per cent. Should the rate of interest be 3 per cent, take one-quarter of \$7.02 which is \$1.76. In cases where the rate of interest desired is not a factor of twelve the operation can be carried mentally till the interest at 12 per cent is reached and for convenience written down. Then if the rate sh^d be 5 per cent, divide this amount by 2 per cent which gives you 6 per cent and deduct one-sixth from this amount, the remainder being the interest at 5 per cent. Or again one-third of the amount secured at 12 per cent gives the interest at 4 per cent then adding one-quarter of this result we have the interest at 5 per cent. A number of examples, one given below with simple amounts it being advisable to practice on even amounts and full months until the process becomes familiar and then any amount at any fraction of a month becomes a simple matter as will be shown.

Desired the interest on \$756.00 at 4% for 5 mos.

Interest for 5 mos. at 12% is 5 by 7.56 is 37.80.

1/3 of 37.80 is 12.60, the desired amount.

Desired the interest on \$649.75 at 5% for 3 mos.

Interest for 3 mos. at 12% is 3 by 6.50 is 19.50.

1/3 of 19.50 is 6.50 int. at 4%

Plus 1/4 1.63

\$3.13 int. at 5%

Desired the interest on \$532.21 at 8% for 7 mos.

Interest for 7 mos. at 12% is 7 by 5.32 is 37.24

Less 1/3 of 37.24 = 12.41

\$24.83 int. at 8%

When the time given includes fractional parts of a month the number of days given should be treated as a fraction of a month, 30 days being the customary time on which the month is based, so that 10 days is 1-3 of a month, 6 days 1-5 of a month and so on. When the number of days given is not one or more an exact factor

of a month for all ordinary purposes it is sufficient to add on or drop one or two days to make it so. For example 13 days would be considered 1-2 of a month or 15 days, or by dropping a day it would become 2-5 of a month. Thus the operation in arriving at the interest on any amount at 12 per cent for the given time would be as follows:

Desired the interest on \$873.64 at 12% for 3 mos. 21 days.
 Interest for 3 mos. is 3 by 6.74 is 20.22
 21 days or 2/3 of 6.74 is 4.49

\$24.71 int. at 12%

The operation would then be continued to secure any rate as shown before. It will be seen also that on the basis of 30 days to a month that removing the decimal point one unit to the left, in the amount of interest for one month you have the interest for 3 days. The above example can thus be simplified as will be found in the majority of cases, it becoming again merely a mental multiplication of .67 by 7 instead of taking 2-3 of 6.74, requiring figuring by anyone not somewhat proficient in mental arithmetic. Thus the process would be as follows:

Interest on \$873.64 at 12% for 3 mos. is 20.22
 Interest for 21 days is 7 by .67 is 4.69

\$24.91

By this method with a little practice anyone can arrive at the interest on any amount for any given time in much less time than with the old process of multiplying the principal by the rate to secure the interest for one year, and reducing this amount to the time in months and days required. It will be found much quicker also than using an interest book as it is always necessary to write down several amounts and then perform the subsequent addition for total sum, it being much quicker to perform a simple example in multiplication or division by a unit, than to hunt for the proper column in a confusing mass of figures. As a concluding example it is desired to secure the interest on \$1,263.45 at 5 per cent for 3 months 12 days. Mentally we say, 3 times 1263 is 37.89 writing down this amount. Then remembering the

interest for three days, is one tenth of one month we say 4 times 1.26 is \$6.04 which we write down under the first amount, being the interest for 12 days. The sum of these two amounts \$43.93 gives us the interest at 12 per cent for the desired time. One-half of \$43.93 is \$21.97 the interest at 6 per cent, less 1-6 of the amount which is \$3.66, leaves \$18.31 the desired interest which is obtained in much less time than it takes to tell it. The operation is shown below and it will be seen that it is only necessary to write down the final amount in each operation.

Desired the interest on \$1,450.00 at 7% for 4 mos. 5 days.

4 by 14.50 is 58.00 int. for 4 mos. at 12%
 1/6 of 14.50 is 2.42 int. for 5 days at 12%

\$60.42 total int. at 12%
 1/2 of 60.42 is 30.21 total int. at 6%
 1/6 of 30.21 is 5.04

\$35.25 total int. at 7%

Interest on Daily Balances.

EXTEND the daily balance day by day calculating in a separate column the number of days each balance is in existence. Thus, if \$100 were deposited in a bank January 1st and no further deposits or any withdrawals made until February 1st, the number of days would be 31. Multiply the amount of the daily balance by the number of days and divide the product by the interest divisors according to the rate of interest. Thus, the divisor for 4 per cent is 8760; for $4\frac{1}{2}$ per cent, 8030; for 5 per cent, 7300; for $5\frac{1}{2}$ per cent, 6570; for 6 per cent, 6220.

Some Arithmetical Oddities.

BY F. L. SAWYER, M. A.

Here is a circular number of 18 digits

157894736842105263

Multiply it by any number whatever and the product will still consist of the same figures in the same order.

The sum of any number of consecutive odd num-

bers is always a square number. For instance, the sum of 1, 3 and 5 is the square of 3; the sum of 1, 3, 5, 7, 9, 11, 13, is the square of 7. In each case the sum will be seen to be the square of the number of terms taken.

The following equations may be added to the remarkable combinations discovered by Prof. Asoph Hall, as mentioned in the September Book-Keeper:

$121=2 \times 2.$
 $12321=3 \times 3.$
 $1234321=4 \times 4.$
 $123454321=5 \times 5.$
 $12345654321=6 \times 6.$
 $1234567654321=7 \times 7.$
 $123456787654321=8 \times 8.$
 $12345678987654321=9 \times 9.$

123456789	times	9	plus	10	equals	111111111.
123456789	times	18	plus	20	equals	222222222.
123456789	times	27	plus	30	equals	333333333.
123456789	times	36	plus	40	equals	444444444.
123456789	times	45	plus	50	equals	555555555.
123456789	times	54	plus	60	equals	666666666.
123456789	times	63	plus	70	equals	777777777.
123456789	times	72	plus	80	equals	888888888.
123456789	times	81	plus	90	equals	999999999.

This table is still more interesting when it is noticed that each multiplier is divisible by 9, and that, when the figures of each answer are added together and the added number is subtracted, the answer is 0. For example, the sum of 1,111,111,111 is 10; 10 minus 10 is 0.

987654321	times	9	equals	888888889.
987654321	times	18	equals	1777777778.
987654321	times	27	equals	2666666667.
987654321	times	36	equals	3555555556.
987654321	times	45	equals	4444444445.
987654321	times	54	equals	5333333334.
987654321	times	63	equals	6222222223.
987654321	times	72	equals	7111111112.
987654321	times	81	equals	8000000001.

In this table it will also be noticed that each multiplier is divisible by 9, and that, if the figures in each answer are added together, they will form a total which, if added together, will equal 9. For example, take the second answer, 1777777778. These figures added together equal 72, and 7 plus 2 are 9.

The number 142,857 is quite peculiar, and forms the basis of many seemingly marvelous number tricks.

$$\begin{aligned} 142,857 \times 1 &= 142,857. \\ 142,857 \times 2 &= 285,714. \\ 142,857 \times 3 &= 428,571. \\ 142,857 \times 4 &= 571,428. \\ 142,857 \times 5 &= 714,285. \\ 142,857 \times 6 &= 857,142. \\ 142,857 \times 7 &= 999,999. \\ 142,857 \times 8 &= 1,142,856 \end{aligned}$$

It will be noticed that the products down to that by 7 consist of the figures of the number 142,857 in regular order, but beginning at different places. The product by 7 consists of 9's only. The product by 8 is the product by 1, diminish by 1 and with 1 prefixed. The products by 9, 10, 11, 12, 13 are made from the products by 2, 3, 4, 5, 6 in the same way as the product by 8.

$$142,857 \times 14 = 1,999,998.$$

The products by 15, 16, 17, 18, 19, 20, are gotten from the products 1, 2, 3, 4, 5, 6, by subtracting 2 and prefixing 2.

For example—

$$142,857 \times 19 = 2,714,283$$

The product by 5 is 714,285. When 2 is subtracted and prefixed this becomes 2,714,283. The reader will readily see how this peculiarity extends to the products by all numbers.

In general, to multiply any number by 142,857, divide the number by 7, and from that number among the products of 142,857 by 1, 2, 3, 4, 5, 6, 7 corresponding to the remainder subtract the number of 7's and also prefix the number of 7's.

Illustration: Multiply 635,485 by 142,857.

$635,483 \div 7 = 90,783$, with remainder 4. The remainder 4 corresponds to 571,428. $571,428$ less $90,783 = 480,645$.

To this remainder prefix 90,873, and the product 90,783,480,645 appears.

The number 142,857 is the integral part of the quotient arising by dividing 1,000,000 by 7. Or, it is the simple repetend produced by reducing the common fraction $\frac{1}{7}$ to a decimal. Any person at all familiar with

the subject of repetends will readily see that any number of sevenths similarly reduced must give a like repetend, the repeating figures, of course, occurring in a different order. But there are more striking peculiarities connected with this repetend not noticed in the article referred to. For instance, take the repetends for 1-7, 2-7, 3-7, 4-7, 5-7, and 6-7 with the successive remainders arising from their production in regular order and we have,

Fraction.	Repetends.	Remainders.
1/7	142857	326451
2/7	285714	645132
3/7	428571	264513
4/7	571428	513264
5/7	714285	132645
6/7	857142	451326

First, the sum of the digits of each repetend is 27, and the sum of each perpendicular column is also 27.

Second, the numbers headed remainders are simple repetends, each one succeeding the first commencing with the same numerical period as the original repetend.

Third, the sum of the digits of each remainder is 21, and the sum of each perpendicular column is also 21.

Fourth, if the repetends be expressed as a common fraction the radix for their reduction is 27, 37, 143.

Fifth, express the remainders as a common fraction and reduce to the lowest common denominator, 9009, and the common radix of the numerators will be 70 with quotients of independent relations, and the successive remainders 1, 2, 3, 4, 5, 6.

The curious in such matters might find pleasure, if not benefit, in discovering an explanation for the appearance of 27 and 21 in the horizontal and perpendicular summation of the digits in the repetends and in the remainders.

The number 588,235,294,117,647 possesses similar properties.

"One Hundred" Problem.

Can you arrange the figures—1, 2, 3, 4, 5, 6, 7, 8, 9, 0—so that they will foot up 100 without using any number twice?

$$\begin{array}{r} 8 \times 9 + 7 + 6 + 5 \\ + 4 + 3 + 2 \\ + 1 + 0 = 100 \end{array}$$

SOLUTIONS.

$$\begin{array}{r} 70 \\ 12 \\ 9 \frac{8}{4} \\ 5 \frac{6}{3} \\ 76.9 \\ 0.1 \\ 2. \\ 5. \\ \hline 48/3 \end{array}$$

100.

$$\begin{array}{r} 1 \\ 3 \\ 4 \\ 5 \\ 6 \\ \hline 80 \\ 2+7 \\ \hline 9 \\ \hline 100 \\ \hline \hline \end{array}$$

$$\begin{array}{r} 1 \\ 3 \\ 4 \\ 5 \\ 6 \\ \hline 80 \\ 9-2 \\ \hline 7 \\ \hline 100 \\ \hline \hline \end{array}$$

$$\begin{array}{r} 0 \\ 3 \\ 4 \\ 7 \\ 8 \\ \hline 12 \\ 65.9 \\ \hline 100 \\ \hline \hline \end{array}$$

$$\begin{array}{r} 1 \\ 2 \\ 6 \\ 7 \\ 8 \\ \hline 35 \\ 40.9 \\ \hline 100 \\ \hline \hline \end{array}$$

$$\begin{array}{r} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ \hline 6 \\ 8 \\ \hline 70.9 \\ \hline 100 \\ \hline \hline \end{array}$$

An Efficient Voucher System.

IN a large business two series of vouchers are maintained; one to cover accounts payable and expenditures and the other to cover employees' accounts for checks and cash drawn and the few sundry cash expenditures. This gives a voucher for every cent paid out whether cash or check.

When goods are to be ordered an order blank is made out in duplicate, the original is sent to the party and the duplicate is placed in a file labeled *goods ordered*. The orders are numbered consecutively. Upon receipt of the invoice it is stamped with a rubber stamp and prices and extensions examined and O. K'd.

As bills are vouchered monthly or oftener if cash discounts are allowed, all bills from the same firm are stamped with the same voucher number, bills and requisi-

tions securely fastened together and placed in a file to await payment. When payment is to be made a voucher is made out, items of distribution, etc., entered in voucher register, and check and voucher sent to creditor. The total of the check is entered on credit side of cash book in column headed "vouchers payable." When voucher is returned properly receipted, all bills and requisitions referring to same voucher are filed with it. Upon return of the check it is also filed with voucher, thus giving a history of everything bearing on the order from the

No. _____	Nevada Live Stock Co. Deep Hole, Nev.
To _____ _____	

Correct?	\$ _____ RECEIVED OF THE Nevada Live Stock Co.
Book-keeper	_____ Dollars
Approved by	IN SETTLEMENT OF ACCOUNT AS ABOVE.
	Sign _____
Supt.	Date _____ per _____
	<i>Please date sign and return</i>

original requisition to the ultimate settlement of same.

The total of amount column in voucher record is posted at end of the month to credit of vouchers payable account in the general ledger. Total of vouchers payable column in cash book is posted to the debit of vouchers payable account.

The difference between the debit and credit sides of this account will represent the amount of bills unpaid.

Labor Saving Retail Sales Record.

SUCH a vast amount of time is wasted in retail stores in keeping track of "charge" sales, that any good, practical system should be welcomed as a much needed economy.

A large number of proprietors of retail stores, however, know just enough about book-keeping to believe it necessary to open ledger accounts with all customers and post the items of all sales thereto. These items are copied once a month on statement blanks which are then mailed to customers, and altogether, there is a considerable amount of work involved, most of which is entirely unnecessary.

Perhaps as good a system as any, under ordinary conditions, is described below:

The counter clerks enter customers' orders on sale tickets or debit slips in duplicate. When the customer takes the goods he is given the duplicate; when the goods are delivered the duplicate ticket goes with them. The original is handed to the book-keeper who, at his leisure, enters the items on a regular billhead (long size), again in duplicate.

At the end of the month the bills for that month are cates are attached to the counter charge slips. A re-footed and the originals sent to the customers. The duplication of the footings is made and the total debited to an account which is opened in the ledger and called "May sales" or "June sales" or whatever month's business it may represent.

The bills are filed in a separate file which is labeled "May bills" and which is really the May or June sales ledger.

A six column cash book is used, separate columns being provided for cash sales, May (etc.) sales, sundries. The total of May sales column is credited to May Sales account in the ledger, so that the amount of May sales remaining unpaid can be ascertained at any time. As accounts are paid they are removed from the May file. When a payment on account is received it is deducted from the total of the bill and the latter remains in the May file until paid or otherwise disposed of.

Some of the advantages of the system may be summarized as follows:

Unpaid accounts of previous months show up sep-

arately on each month's trial balance, thus commanding attention and investigation.

No customers' ledger account, no posting, no drawing off balances.

Economy of time, labor and ledger space.

Facility of obtaining trial balance.

A Quotation Record for the Buyer.

A RECORD of quotations received is an important thing especially if the purchase of any considerable variety of articles is entrusted to a buyer.

The letter of quotation is sometimes preserved to act as a record but this is a clumsy method because it presents no comparative statement of quotations received from different sources on the same article. More than this, a way should be provided for recording verbal and telephone quotations as well.

The form shown here is a 3x5-inch card, one card being used for each article quoted except where whole lists are submitted for figures in which case it is not necessary to make a card record. As both sides of the card are used and as it is the usual custom to purchase a 60 days' supply of a commodity a card will last a long time.

This card is valuable—not only as a clear comparison of prices quoted but also as a means of reference to previous orders when it becomes necessary to re-order the same articles.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20				
21	22	23	24				

15" →

Efficient Method for Keeping Record of Office Supplies.

A SYSTEM for the storage and record of office supplies such as pencils, ink, etc., is essential to the proper conduct of any business office. There are many different methods of handling the storing of these articles, some of them good, others poor. In some offices very little effort is made to keep these things in proper shape, and as a result some day there are no invoice blanks on hand, or the stenographer reports to the office manager that the writing paper is all gone. "Just used the last sheet." Such situations are trying in the extreme, and there is no reason why such conditions should exist.

We will make a list of the various office supplies that ought to be accessible and ready for use at all times, which ordinarily would be about as follows: Pens, ink, pencils, penholders, pins, paper fasteners, sponges, rubber bands, inkwells, letter paper, carbon paper, card index cards, mucilage.

Box #1 - Pencils					
$\frac{1}{2}$ doz	Black	5 doz	30 doz	J.A. Hunt & Co.	8-31-03
5-10	"	10 "	30 "		

This is a fairly comprehensive list of usual office supplies for the ordinary conduct of business. There may be slight variations from this list, but it is a substantial one, and will answer our purpose of illustration fairly well.

Have a cabinet made like sketch, and number each drawer consecutively. You will notice the drawers are of different sizes and that there are two rows reserved for some of the articles. This is to provide plenty of room for certain articles which are largely used, so that

the entire stock may be kept in the one place. The bottom row is reserved for storage only, and the row above it contains the working supply. The drawers will easily accommodate the entire stock of each article, and it will not be necessary to divide up the stock.

Each article should be given a card, and the number of the box containing it will be recorded on the card, as also amount of purchase, price, from whom purchased, and length of time the supplies lasted.

Efficient System for Keeping Track of Piece Work in the Clothing Business.

A QUESTION which all manufacturers of clothing are often more or less troubled with is how to keep track of cuts in work by the tailors, or operators, or finishers. In a small concern where fifty workmen are employed, this can be easily kept by making an entry in each operator's book of what garments he has made, and at the same time the book-keeper makes an entry into his own book used for the purpose. It must be understood that all these hands are piece workers. The question arises where a firm has five hundred or more hands, all being piece workers. This can be then managed by a ticket system. The book-keeper, or the man in charge of distributing the garments to the operators, puts a ticket into each bundle, marking on same the quantity of garments contained in that bundle.

The tailors, when they have finished the garments, present same to the examiner, who O. K.'s the garments if correctly made and signs the tickets which are then good for the price of labor for that particular style which each ticket calls for. This ticket is not valid, unless it bears the signature of both foreman and examiner. Each garment has the trade mark of the firm sewed on it, also having the order number written on said trade mark ticket. The garments after being passed by the examiner, are transferred to the shipping department where the shipping clerks assort all garments according to like order numbers. The office men have by this time trans-

Order # <u>800</u>	Tailor <u>5000</u>	Operator <u>5000</u>
Style <u>1001</u>	Style <u>1001</u> Amt. <u>4</u>	Style <u>1001</u> Amt. <u>4</u>
Tailor <u>40</u>	Signed <u>Date 10/3</u>	Signed <u>Date 10/3</u>
Operator <u>130</u>	Countersigned <u>Manufacturer's Co.</u>	Countersigned <u>Manufacturer's Co.</u>
Date <u>10/03</u>		

STUD

ferred the order to a shipping slip which is in the possession of the shipping clerk.

The shipping clerk having this shipping slip is posted as to what garments are in work and for whom, and by the date of the order on said slip knows when the garments are due in his department. We assume that the garments being assorted, that order number 800 is amongst the lot. The shipping clerk then checks off the garments that he has ready to ship for order number 800 and hands the shipping slip into the office where the bill is made. (See illustration how garments are checked off from the shipping slip.) Before the shipping clerk hands the package containing goods for order number 800, or the John Brown Company, to the express company, he must enter into a book used for that purpose, the date, the order number, the quantity shipped to said order number and how shipped.

A Card System for the Memory.

MANY a memorandum comes to your notice during the course of a day's business which requires no action just at the moment, but it should be attended to, perhaps tomorrow, the day after, or possibly some day next month. It is always an easy matter to forget little items of this character, and to act as an automatic memorandum a little desk box should be provided. Any stationery store will sell you a desk drawer box which will fit inside of any one of the drawers of your desk. This box contains a set of monthly index cards for the year and a set of index cards numbering from 1 to 31 covering each day of the month. When a matter is brought to your notice which you desire to have again called to your attention on the 10th of the month, we will say, you fold it in a convenient manner and place it in front of the card bearing number 10. This same action is taken with every matter coming to your notice which requires setting forward for attention, and when you come to your desk in the morning your first duty will be to take out the papers and

cards for that day, setting the card behind with the previous cards at the back of the box, and giving proper attention to the memorandum which is brought to light.

If the papers in each day's compartment are taken out each morning it will always be certain that every matter requiring your notice will be given prompt attention just when it should be attended to and that nothing will be overlooked.

In case a memorandum requires setting forward beyond the limits of the present month it is simply placed next to the index card representing the particular month, when it will come up automatically on the first day of that month.

Order Register.

WHERE concerns are handling a large number of orders of small individual amounts it is often found advisable to provide an order register. All orders are registered as soon as O. K.'d by the credit man, and then transmitted to the order filing department. The lines on the order register are numbered consecutively and by means of a suitable numbering machine which can be purchased very cheaply the order is made to bear the number shown on the register. A convenient arrangement provides an extension column on the order itself and the prices and extensions are carried out thereon. After this is done and the bill made out the amount of the order is entered upon the order register, and if desired this order register can be used as a journal, the amounts being posted to the individual accounts instead of posting from the order itself. In case it is desired to distribute sales according to sales territories, or according to salesmen's territories the order register can be provided with vertical columns, one column for each sales division. If a cross check as to the total amount is desired the amount of the order irrespective of the territory to which it is to be credited can be entered in the first column and again entered under the appropriate heading in one or another of the vertical columns.

The total footing of these columns at the expiration of the month, week or other period determined upon gives the total sales of any given salesman or in any given territory. This first or check column is not necessary, however, although it costs but a slight amount of additional work on the part of the entry clerk. It will readily be seen that no page will be footed until return has been made of every order listed on that page, and no page will be ruled off as complete until all previous pages are filled. A glance at the register at any time will show just what orders are filled and unfilled, and if for any cause an order is delayed an unreasonable length of time through inability to fill, etc., it can be canceled, transferred to a later number and re-numbered on its face, a note of the transfer number being made on the order register.

Perpetual Inventories.

THE following method is used by a large clothing house:

1. The salesman makes sale slip or ticket with each sale showing the cost in characters and the selling price in plain figures, of the articles sold.

2. This slip goes to the cashier, who records both cost and selling price on daily sale sheet, of that department.

3. The total footings for each day, are posted as follows: In ledger, each department is credited with selling price of goods sold. In stock book, each department is credited with cost price of goods sold.

4. Invoices of goods received are charged to proper department at cost price, on both ledger and stock book.

This will then allow the gross profit to be shown on the ledger account of each department, and the goods on hand (at cost price) on stock book of each department, and the accounts, at time of closing, would look something like the following:

Cashier's Report of Sales, Month of ———, 19—.

No. 1.				
Clothing	\$800 00	\$450 00	\$1,250 00	\$1,000 00
No. 2.				
Shoes.				
No. 3.				
Hats, etc.				

CLOTHING DEPT. (LEDGER ACCT.)

March 1—	
Inventory	\$9,000 00
Purchases	500 00
Gross profit	250 00
	<hr/>
	\$9,750 00
Total sales	\$1,250 00
Inventory (cost)	8,500 00
	<hr/>
	\$9,750 00

CLOTHING DEPT. (STOCK ACCOUNT).

March 1—	
Inventory (cost)	\$9,000 00
Purchases	500 00
	<hr/>
	\$9,500 00
March 31—	
Cost on sales	\$1,000 00
Cost inventory	8,500 00
	<hr/>
	\$9,500 00

If goods are marked down and sold for less than cost, they are so shown on sale ticket, and loss appears on ledger account with department, but not on stock record.

Time Savers for the Office Man.

THE ordinary office man wastes too much time in doing unnecessary things—too much time in running around looking for something which his office boy could get for him just as well.

How many office men do we see scrambling through a drawer full of papers to find a certain one which is needed at the moment. Valuable time is wasted—his time or his employers. Keep papers of every class in a separate compartment, thus: Procure some pieces of heavy Manilla paper about 12x18-inches in size and fold each one through the middle making a "folder" about 9x12-inches and place them on your desk ready for use. Letter or label these folders according to your needs and always remember that they are not letter files or "grave yards for letters" but merely temporary rest-

ing places for material which is soon to be referred to. One for instance, may be lettered "Quotations to be made," another, "Suggestions for advertising," another "For Dictation," etc., etc. The various purposes for which each separate folder may be reserved will readily suggest themselves when the scheme is placed in operation.

Labor-Savings System of Keeping Track of Printed Matter.

ALMOST every office which uses a great deal of stationery or printed matter has more or less trouble in keeping track of it. Very often, just when badly needed some certain blank or card runs out, necessitating exasperating delay, extra haste and often poor work on the part of the printer in getting out a new supply. Very often stationery is misplaced or overlooked, and when the new lot is printed it is found that there is an ample supply of the old at hand. It often takes considerable research to find out who was the printer, the quantity used, when the supply is likely to run out, as well as the cost, and the quantity which should be ordered. It is also desirable to have a plan by which, if a change is to be made in the new edition, note to that effect can be made without danger of overlooking it. The plan devised and used by the Inland Type Foundry is very simple and inexpensive. By its use not only can the desired piece of printed matter be found instantly, but at any moment the system will tell the cost, how much is on hand, when it is likely to run out and from whom it should be procured. Here are the details:

When printed matter is ordered, the order specifies into how many packages it must be wrapped. When it is received by the clerk who has charge of the stationery, a sample is reserved and pasted in a scrap-book, together with the date, the amount and the cost, which last may be in cipher if desired. The stationery is all kept in a large cabinet, the different divisions of which are marked

BUSINESS SHORT CUTS

Printed by <i>Warner</i>		3/21 1902		Total No. Printed 1000		No. of Pgs. 10		Kept in Division <i>P3</i>	
Taken Out	Taken Out	Taken Out	Taken Out	Taken Out	Taken Out	Taken Out	Taken Out	Taken Out	Taken Out
1	14	27	40	50	63	76			
2	15	28	41	51	64	77			
3	16	29	42	52	65	78			
4	17	30	43	53	66	79			
5	18	31	44	54	67	80			
6	19	32	45	55	68	81			
7	20	33	46	56	69	82			
8	21	34	47	57	70	83			
9	22	35	48	58	71	84			
10	23	36	49	59	72	85			
11	24	37		60	73	86			
12	25	38		61	74	87			
13	26	39		62	75	88			<i>\$2.60</i>

with letters. Before putting away a lot, to each package is attached a label similar to fig. 2, which is reduced one-third. Whenever a new lot of matter is received, the bundles are counted to see if they agree with the requisition and a card is filled out like figure 1. It is hardly necessary to say that at this time nothing is written against the numbers, which fill the greater part of the sheet. In the Inland Type Foundry's office a stock-card is used (shown reduced in the illustration), which, as will be noted, contains but 88 numbers. This card measures 4x6 inches. Where a great number of packages are to be used, it is better to get a little larger card, so as to contain 100 numbers. It is unnecessary in most cases to have a hole for a rod, so that all the lower space may be

Package No. <u>8</u>	Div. No. <u>P 3</u>
Received <u>3/21</u>	<u>190.2</u>
CONTAINS	
<u>100 Estimate Blanks</u>	
<u>small</u>	
Total No. Printed <u>1,000</u>	No. of Packages <u>10</u>
Use highest numbered package.	

utilized. If more than 100 packages are to be used, which is seldom the case, a small supply of additional cards running from 101 to 200 and from 201 to 300 can be procured. In case a large number of packages are received, two or three cards can be used, each bearing the same heading, the card with the highest number being placed on top and the cards fastened together with a wire clip. The clerk in charge of the stationery and other matter looks up and sees where there is space in the cabinet for the fresh consignment (in this illustrative case Estimate Blanks), and then puts the proper letter in the upper right-hand corner of the card (P3). A little experience will soon demonstrate the size packages which are required for each instance, the cards themselves being a fair indication as to how rapidly each particular kind of

stationery is used. Each label has not only a description of the contents, but states the quantity in the package, the total number of packages and the number of the package. The stationery clerk has rigid instructions to always take out the highest numbered package, in this case No. 10. After the entries are made and the packages put away on their proper shelves, the cards are filed alphabetically in an ordinary indexed card-tray. If any one requires stationery of any particular kind, the requisition is presented to the clerk who has it in charge and the proper card is found in the tray. A glance shows that in this case there are 8 packages left, consequently the clerk will go directly to the cabinet, and take out of Division P3 package No. 8, deliver it and enter the date on the card. While so doing, this clerk glances at the card and notes how many packages are remaining. The blank spaces above the dates show this, while the dates themselves show how many packages have been used. By comparing the first date with the last, the quantity used within a certain time is easily ascertained, and if the stock on hand is running short an order is made out for a further supply, notation being made on the face of the card to that effect. If the dates of the old card (which is kept in another part of the tray) indicate that a large quantity is used an inquiry is made if the same piece of stationery is likely to be in constant use, and a greater quantity is ordered. If the dates on the card indicate that the amount last printed is sufficient to last for an extended time, a lesser quantity is ordered. If desired, in addition to the date, room may be left on the card for the requisition number, or another column may be added, in which a letter or a number indicates the person or department to whom these blanks were delivered, and in this way track is kept of where the goods have gone.

Although over 1,000 different kinds of printed matter are kept in stock, the supply is kept in such shape that it is seldom necessary to order anything in a very great hurry. The proper amount is ordered, and the printer given sufficient time to get it out in presentable style.

Tools and Their Care.

EVERY manufacturing institution and practically every mercantile institution is obliged to include as a part of its equipment a certain investment in tools. In the case of a mercantile institution this investment is small, and with the value of tools alone to be considered it would hardly seem necessary to pay much attention to their care. As a matter of fact in mercantile houses the value of the tools is insignificant compared to the waste of time incidental to hunting them up when they are needed. No part of the permanent equipment of most institutions is so carelessly used or so poorly cared for as these same tools, and in an institution of any size the loss through carelessness or abuse of tools is considerably more than one would think, unless the matter has been investigated. No matter what the size of the institution or what the amount involved in the tool equipment the responsibility for the care and preservation of the tools should be vested in one person, this person to be made responsible for the safe keeping of all tools in his charge. In the case of an establishment large enough to use time checks for its employes the time check may be deposited with the person in charge of the tools in exchange for the tool borrowed. As the workman cannot, of course, enter his time without the check he will naturally make it a point to return the tool and get his check back again, and the man in charge of the tools will see that no check is given back to the workman without the return of the tool it represents.

In a small establishment where time checks are not used and where a regular tool room is not maintained it will be sufficient for the custodian to make a memorandum of the name of the borrower of the tools, the memorandum to be canceled when the tool is returned. At intervals the tool keeper should be required to furnish an inventory of all tools, which inventory should be compared with the original inventory and the dis-

crepancies explained and accounted for. In every case a positive rule must be in force that all tools of every character must be returned by the borrower. This will not only prevent unnecessary loss which is also an amount large enough for consideration, but it will also result in the saving of a considerable amount of time

BORROW SLIP.

SMITH & JONES' TOOL ROOM.

Date _____

Received of

Storekeeper—The following tools which I agree to become responsible for until safely returned by me.

Workman.

wasted in hunting for tools as above stated. Where no rules of this sort are in force it is quite customary for a workman to borrow a tool, say a saw, hammer or some similar instrument and drop it just where he ceased to use it, and the next man who wants it must hunt it up, inquiring from man to man who had it last. This waste of time may seem to be very small but after all it is quite an item in a small establishment. The writer has seen enough time wasted hunting for a hammer and saw to pay for the tools twice over. Time is money, so have a place for your tools and keep them in that place.

A suitable rack of pigeon holes will be provided for the storage of tools and the check or slip identifying the borrower will be placed in the space from which the tool was taken.

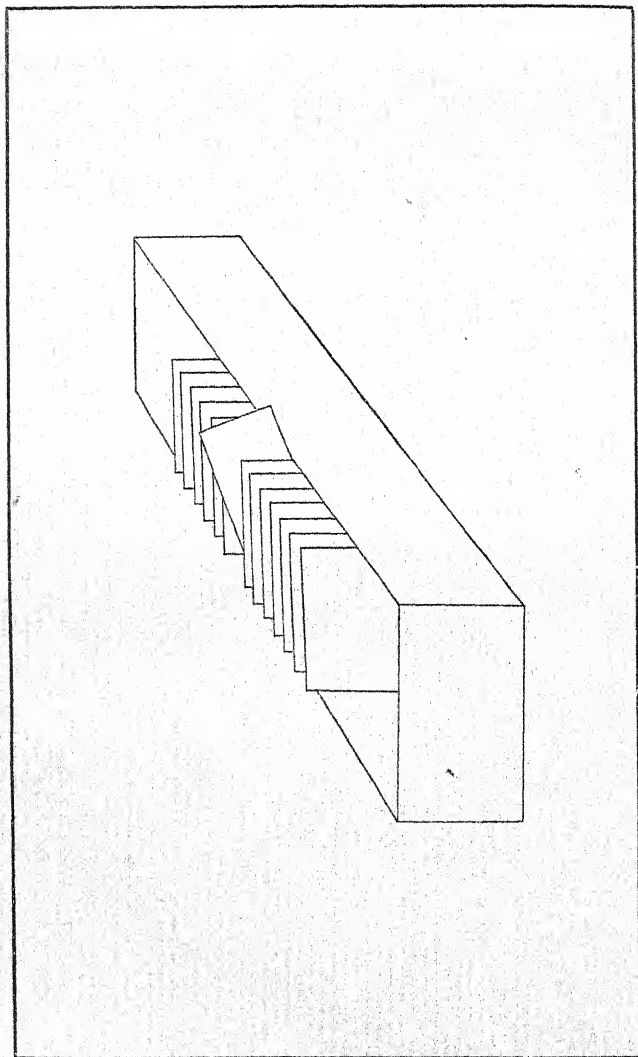
A Quick System for Filling Orders.

IN many jobbing concerns a great deal of time is wasted in filling orders. A shoe house with which the writer once came in contact, was in the habit of starting all orders on the top floor. The warehouse contained five floors and stock men and helpers were required on each floor. Nearly every order received called for goods stored on from two to five different floors. As a result of starting the orders on the top floor, the order clerks on the lower floor had nothing to do in the morning and toward night they had more than they could do while those on the upper floors were out of work.

To overcome the difficulty as many copies of the order were made as there were floors. A copy of the order went to the stock man on each of these floors so he could get his part of the goods out at once, sending them to the shipping room where the order was assembled. The next copy of the order was sent to the shipping clerk and on this he checked the goods as they came to him from the different floors and his copy would show when the order was completed, at which time it could be packed for shipment.

Handling Cards.

HERE is a simple but effective scheme to insure the return of a card to its proper place in the file, when it has been removed for reference. When you take a card from the file it often happens that some one else refers to the same file or a slight jar causes the cards, which have left an opening where you have removed the card, to slide together. It is then necessary to finger the indexes until you find the exact place where the card belongs.



The next time you remove a card from the file, pick up with it the next card back and as you remove your card allow the other to fall back into the tray so that it strikes on one corner with the side resting on the edge of the tray, as shown in the illustration.

When you wish to return the card to the file all that is necessary is to place it immediately in front of the card with the corner projecting.

A Safeguard for the Correspondence Files.

IN every large office more or less confusion is caused on account of correspondence being out of the files which cannot be located without consulting all of the people who are accustomed to obtain correspondence for reference. This is particularly true where there are several correspondents.

One correspondent sends to the file for a letter of a certain date from John Dow, and before he has returned it, some other department wishes to consult the same letter. The filing clerk, as a rule, does not remember to whom the letter was given and knows only that it is not in the files. This results in an exasperating delay, to say nothing of the loss of time in searching for the letter.

The problem of keeping track of correspondence when it is out of the files has been satisfactorily solved in a very simple manner by one large concern with which the writer is familiar.

Each correspondent who has the authority to call for letters from the files is furnished with a block of slips, like Form No. 1. This is a requisition on the filing clerk for certain correspondence. This is filled in, signed and dated by the correspondent and sent to the files. When the filing clerk delivers the correspondence, this slip is placed in the files as a charge against the correspondent. The concern in question uses the vertical filing system and has adopted another scheme to make this system even more simple.

When a requisition for correspondence is received, the filing clerk delivers the folder with all of the correspondence, so if one letter does not give the desired information, the correspondent will have before him all the letters bearing on the subject.

When the folder is taken from the file, another folder of color which is a strong contrast to the regular folders, is put into the file in place of the original, and the requisition slip is placed inside of this colored folder.

_____ 190_____	
Please furnish Correspondence of: _____	

Delivered	Signed
_____ 190_____	_____

As manilla is the color usually adopted for the regular folders, red or blue is a good color for the special folders. This can be furnished by any printer cut from very ordinary paper stock.

The advantage of this scheme is that when correspondence leaves the files, the filing clerk is not requested to make an entry to trace the correspondence but has a receipt signed by the person to whom it was sent. Care should of course be used to deliver none without a properly signed requisition.

A Reminder Which Will Not Be Overlooked.

A VERY busy man who is at the head of three or four large institutions which keep him away from his office a great portion of the time has adopted a plan which enables him to have presented at his desk a memorandum which may come to him at any odd moment when away from his office. He carries in his pocket a supply of U. S. postal cards, and when an idea strikes him he jots it down on one of these cards and drops it into the next mailing box he comes to. These postal cards are already addressed to him, and when he returns to the office they are there to be attended to in due course. The gentleman in question claims that this is the best scheme he has ever seen for keeping in view occasional thoughts which would otherwise be lost track of entirely in the pressure of other and larger affairs.

Loose Leaf Inventory Taking.

THE annual inventory of a mercantile or manufacturing concern is a much dreaded job as a general thing and especially so in those concerns where a "shut down" is necessary during the inventory's progress. The usual custom is to use a number of blank books—one or more for each department—pricing and extending the items when the inventory is complete. This necessitates a delay in the work of pricing and extending which can be entirely done away with by the use of loose leaves or sheets.

If these sheets are numbered beforehand there is no danger of the loss of any sheet and as each one may be sent to the pricers as soon as complete much time is saved. By the use of this method the final figures may be ready within a few hours of the time when the last item of stock is entered.

The loose sheets are, of course, bound into book form for preservation.

On Handling Orders.

IT will be assumed that a modern mercantile establishment will have provided a means for the prompt classification and distribution of all incoming mail so that mail of every character will be sent at certain stated times of the day to the proper persons for attention. It will be found wise to arrange that mail be delivered at the various desks not oftener than four times a day except in special cases.

The credit man for instance will have his work simplified if orders reach him at certain stated times and can thus be looked up and passed upon in bunches. Where orders come through for attention one or two at a time too much unnecessary waste of valuable time results. The first step in handling the order is the authorization of credit by the credit manager. In order to preserve a proper routine all orders, even cash and C. O. D. orders, should follow the same course as a credit transaction. It might easily chance that certain circumstances would make it inadvisable that an order should be filled even though it be cash or C. O. D. Every mercantile institution has had experience with the man who orders goods C. O. D. and then allows them to be returned, thus throwing the charges both ways upon the shipper. A rubber stamp can be used for authorizing credit, and the sketch shown below indicates a proposed form.

In some instances this form can be printed on the order blank, but if orders are put up or entered from the original as written by the customer a slip of paper gummed on one corner can be provided in place of the rubber stamp. This is often found more convenient than the stamp for the reason that in the case of the printed slip it can be attached to the order always in the same position whereas there might not be a blank space convenient for the placing of the stamp. If the order is one demanding special attention in the way of a hurried shipment the slip used may be printed on red

paper, having it understood in the establishment that all orders bearing the red credit slip will receive immediate attention. Care must be taken, however, that this red slip be used only when haste is imperative, for the effect of the slip will be lost if it is used indiscriminately.

Of course it will not be necessary to go through the full investigation of all orders. Many of the orders passing through the credit manager's hands will at once be recognized as unworthy of credit without investigation, while others must necessarily go to the accounting department for data before the order is filled. The form provides for a statement from the accounting department as to the amount the purchaser now owes, the proportion of this which is due, the highest credit, or the largest amount his account has reached during the year. The next line lettered SHIP: is intended to bear special instructions in case the credit manager desires to instruct C. O. D. shipment. The last line is to bear the credit man's O. K. and initials in case he decides to authorize shipment.

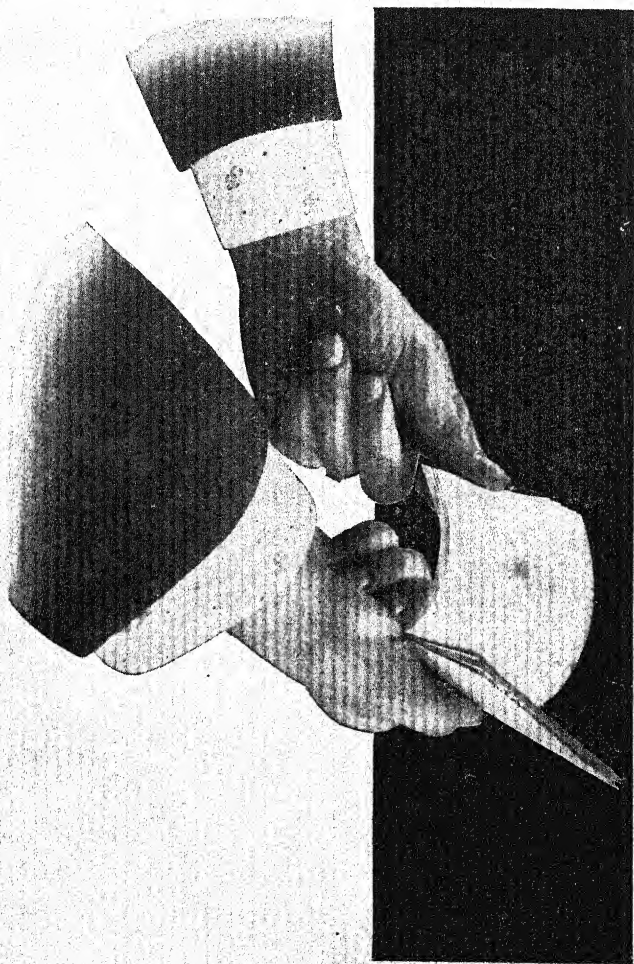
To Finger Cards Rapidly.

MANY people know nothing about handling cards rapidly. The result is that many of them will insist that cards cannot be as quickly handled as the leaves of a book.

In many places where card indexes are used it is necessary to count the cards. To count them in the drawer or to handle each one separately is a slow and unsatisfactory method. They can be counted very quickly, however, if a small handful is taken out at a time.

First see that the bunch of cards is even just as you would "even" a pack of playing cards before shuffling.

Grasp the cards firmly, with both hands, one hand at each end of the bunch, holding them between the thumb and fingers.



With a slight motion of the fingers "travel" the cards until the end of each projects just a little beyond the next card above it.

The cards may then be "snapped" one at a time, slowly or rapidly—for counting or to refer to a name or number.

Try this as shown in the illustration and see how quickly you can refer to every one of a bunch of 25 or 30.

Labor Saving Ledger Card Index.

FROM the illustration hereto appended, the advantage of this card index system is apparent, the same card covering a period of forty-eight years, being ruled and printed on both sides.

A Quick Collection System.

A CHICAGO concern collects a large number of small debts at a very trifling cost by practically acting as its own legal collector.

By paying a young attorney a modest monthly fee they get the privilege of using his name, keeping constantly on hand a supply of stationery with his imprint. A threatening letter from an attorney sometimes works wonders and by this means the effect is produced at very small cost, as the letter to the debtor is sent from the concern's home office, being dictated by the regular collection manager, simply using the attorney's stationery. Should it be found necessary a little later to commence suit against the party the attorney in question commences the suit, but in nine cases out of ten a letter or two written on the attorney's letter head produces the desired effect.

BUSINESS SHORT CUTS

Name _____				Address _____					
Year	Index	Pag.	Pag.	Memoranda	Year	Index	Pag.	Pag.	Memoranda
1907					1919				
1908					1920				
1909					1921				
1910					1922				
1911					1923				
1912					1924				
1913					1925				
1914					1926				
1915					1927				
1916					28				
1917					29				
1918					1929				

Efficient Method of Paying Employes in Large Factories.

EVERY person when entering the employ of the concern is obliged to give his or her pedigree to the doorkeeper, which is duly recorded on an employment blank, and at the same time the person is given a brass check with the number corresponding to number on the employment book. (This number and check is retained by the employe until he leaves, is discharged or transferred to another department.) The employe is also given a small slip printed thereon, "This check will be considered a receipt for your envelope on pay day and under no circumstances will envelope be delivered without it. In case this check is lost, a new one will cost fifteen cents."

The blank after having been O. K.'d by the superintendent or other proper person is immediately sent to the office and the employe's name is then recorded on the pay roll book and blank filed.

Have the pay roll book so arranged as to keep departments separate, for when making same up this will enable you to keep department envelopes entirely separate and greatly facilitate paying off. Start at one end of the room and go from person to person without their leaving their machines or any other particular work, and it will be found that when the paymaster makes his appearance everyone will have his check ready for his envelope.

Before starting to pay count the envelopes and when through the paymaster must return a check for each envelope given out, otherwise he must return the envelopes.

After the checks are returned to office they are given to the doorkeeper, who will arrange same numerically before the morning, and as each employe enters he is given his check.

A System for Supplanting the Purchase Ledger.

MANY of our best, largest and most modern business houses have entirely done away with the keeping of a purchase ledger. These concerns do not open an account with any of the people from whom they purchase goods. It is their custom to discount every bill wherever a cash discount is allowed, and have assumed that no check is needed on the account payable, arguing that if an account is overlooked the man to whom it is due will very promptly call attention to the oversight. If a bill is presented which is incorrect, instead of making a debit against the concern from whom the goods were purchased the bill is returned for correction, a memorandum being kept of the manner in which the bill should finally be submitted. They thus do away with an enormous amount of ledger work which the old fashion of opening accounts with each of the parties through whom goods are purchased entails.

A Quick Method of Making Statements.

WHERE a typewriter is used in making out statements of account it is easy to provide for addressing an envelope at the same time the statement is addressed by inserting in the machine, with the statement, an envelope and placing between the statement and the envelope a sheet of carbon paper. Thus the address is written on the statement and the envelope at the same time the statement heading is written, saving the extra time which is usually consumed in addressing envelopes in which to mail or deliver the statements. An indelible pencil or stiff pointed pen can be used in place of the typewriter by using specially prepared carbon paper which can be obtained from any office supply house. This carbon paper is extra soft and will make a good clear carbon copy amply sufficient for the address on the envelope. In case a collection card is used as well, it can also be made at the same time as statement, making all three copies at once by the use of a book typewriter.

A Scheme to Insure the Prompt Handling of Correspondence.

IN all concerns of any considerable magnitude, where correspondence must necessarily pass through the hands of several departments, the problem of disposing of it quickly is one that requires no little attention.

It has been the writer's experience that all large concerns receive a greater or less number of complaints relative to the delay in answering letters. These complaints for the most part come from individuals who are accustomed to receive but a small amount of mail. The man who writes one letter a week is the most impatient if he does not receive a reply by return mail. It is usually the case that the delay is entirely due to his own lack of method. He will send a remittance and in the same letter refer to an unfilled order and ask for prices on another line of goods. He does not stop to think that this letter must be handled by three different departments, each of which will attend to one of the three subjects covered by the letter, and if he does not receive full information by return mail, he concludes that his correspondence has been neglected.

Inasmuch as we cannot educate our customers and insist on their using a separate sheet for each separate subject, it becomes necessary to overcome the difficulty so far as possible in our own office.

Numerous schemes have been tried, such as making copies of the letters and referring these copies to the various departments interested. One of the best schemes of which we know, is that adopted by one of the big western mail order houses. This concern has a large number of correspondents and each one is given a number, and in the house, he is always known by that number.

In-coming mail is opened and sorted by a clerk who reads every letter to see to what department it belongs. On each letter is placed the number of the department so

that when distributed, the correspondence will go to the proper person.

When a letter requests the attention of two or more departments, the mail clerk determines which is of first importance and then places the numbers of the departments on the letter in the order of their importance. For instance, if a letter contains a remittance, the cashier will be the first one to whom it is sent. These letters which bear two or more numbers are kept by themselves and delivered separately from the other correspondence. After being sorted by departments, the letters are delivered by a messenger and it is the duty of each correspondent to first attend to those letters which bear other department numbers so that no other department need be held up through any fault of his. The stenographers are also instructed to immediately write the answers to these letters and return them to the correspondent. The carbon copy of the reply is attached to the letter which is then placed in a messenger basket, on the desk of the correspondent. The messenger comes around once every hour and collects all mail from these baskets, and after sorting, delivers it to the proper department.

With this system it is very seldom that a letter requiring the attention of several departments is held over night. Another feature of advantage is the fact that when the correspondent receives a letter which has been handled by another department he has before him the reply which gives him full information as to what has been done. Very often the manner in which a letter is handled by one department will have an important bearing on its handling by another.

The expense of this scheme is so small that it need hardly be considered special in view of the saving of time in the handling of correspondence.

A Few Pointers in Regard to Promissory Notes.

PRESENTMENT for payment is not necessary in order to charge the person primarily liable on the instrument, but when payable at a specified place if not presented, the debtor cannot be held responsible for any damages or costs on account of failure to make such presentment.

When payable on demand presentment must be made within a reasonable time after issue.

A sufficient presentment is that made by the holder, or a person duly authorized to receive payment on his behalf at a reasonable hour, on a business day, and at a proper place. If the person primarily liable is absent, or inaccessible, presentment may be made in person at the place specified for payment.

Where no place of payment is named, presentment should be made either at place of business or residence of person primarily liable.

If the maker removes to another place within the state in which the note was issued, the holder is bound to make presentment at that place.

In the case of a note made and dated in New York, the maker then residing in Florida and not having changed his residence at maturity, HELD that demand must be made of the maker in Florida in order to charge the indorser.

Presentment must be made upon the day the paper is due. Presentment either before or after maturity is a nullity.

An acceptance is not good unless completed by delivery. Only those who have the title to an instrument can transfer it, and if held by several jointly, all must join in the transfer, unless one holder is authorized by all to do so.

No one but the drawee can accept a draft unless specially authorized.

○ Acceptance may be conditional, partial, local or qualified as to time.

(1) *Conditional*, making payment by the acceptor dependent upon the fulfillment of a condition therein stated. As the following, written across a draft: "Accepted—payable on surrender of bills of lading for cotton, per ship 'America.'" Or, again, "Accepted—payable when in funds."

(2) *Partial*, or restricted as to amount. As, A. draws on B. for \$100; B. accepts as to \$50. Or, A. draws a draft on B. for \$100; B. accepts it payable \$50 in cash and \$50 in goods. This would be good as to the cash, but not as to the goods.

(3) *Local*, or restricted as to place of payment. As, draft addressed to "B., of Utica," and it is accepted payable at Syracuse, N. Y.

(4) *Qualified as to time*. As, A. draws on B., payable in two months after date; B. accepts, payable in three months after date.

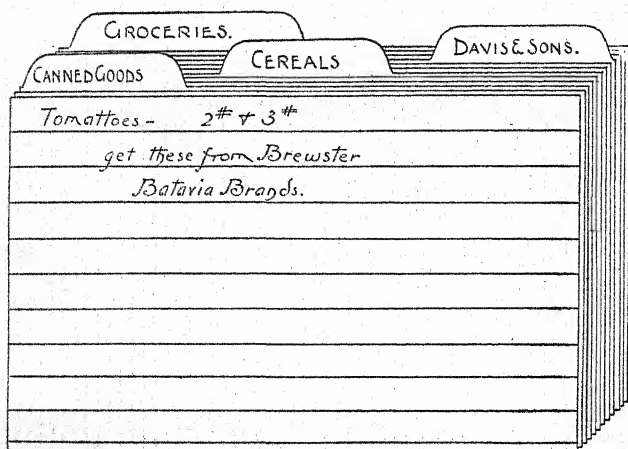
A "Goods Wanted" Register.

EVERY retail merchant at some time starts to keep a "Want Book" in which he proposes to make a memorandum of the goods which are needed, so they can be ordered when the next salesman calls on him. I say *starts to keep*, for the reason that this book is seldom kept up.

The reason is that he has no means of classifying these items and when the salesman calls it is about as much trouble to pick out the items from a book as it is to obtain the same information by looking over the stock.

This can be very easily handled by the use of cards. Whenever stock of any kind has run low, make a note of it on a 3x5-inch card or slip of paper cut the same size, then file this card or slip in a card file. One of the small desk boxes will answer the purpose, or a home made box may be used.

This file should be provided with blank indexes on which are written the different departments or different classes of goods required, arranging these as far as



possible to conform to the lines carried by the jobbers with whom the merchant is dealing. For instance, the general store would have one index headed "shoes" and another headed "groceries." These departments would very likely be subdivided as all of the goods are not bought from the same house.

Where certain houses are favored for certain lines of goods, it is well to have an index headed with the name of each of these concerns. When a salesman for Johnson & Co., from whom you buy crockery calls, you will find behind the index headed "Johnson & Co.," cards showing what is needed in his line.

In the meantime, a salesman from another crockery concern calls and offers some very attractive prices. You will have no difficulty in remembering that you have been buying crockery from Johnson & Co., and can immediately refer to those cards.

One advantage of a card index of such a record as this is, it is never filled up with dead matter. When the goods are ordered, simply destroy the card. This frees the files from dead matter and gives you only the information desired.

A Cross Index.

THERE are many records which are necessary to be cross indexed, that is, indexed in two or more ways. As an illustration, take a collection card or instalment card in the follow-up system. Two things must be known, the name of the debtor or customer, and the date on which the card should be given attention.

If the cards are filed in the alphabetical index it becomes necessary to look through all of the cards every day in order that none requiring attention be overlooked. On the other hand if they are filed in a monthly and daily index under the date on which they should receive attention, we cannot find a given name without looking through all of the cards.

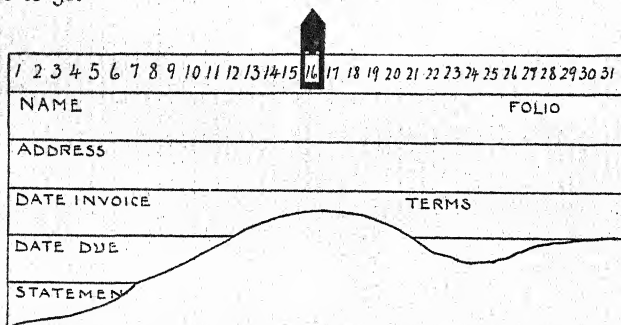
These records may be easily cross indexed by the use of tabs. There are two ways of doing this.

First—Have the cards themselves made with tabs cut 1-20 the width of the card and with the letters of the alphabet printed on these tabs. This provides for twenty divisions of the alphabet, letter "A" being on the first tab at the left of the card and the letters "X, Y, Z" on the last tab at the right end of the card.

6	
NAME	
J. N. Adams & Co.	
ADDRESS	
Buffalo, N. Y.	
DATE INVOICE	TERMS
4/4/04	Net 30 - 2% - 10
DATE DUE	AMOUNT
5/4/04	\$462.78
STATEMENT	2 ^d Notice
	3 ^d Notice
SPECIAL LETTERS	
PAYMENTS	
FINAL DISPOSITION	

In entering the names, select a card bearing a tab that corresponds to the first letter in the customer's name. That is, "Jones" would be entered on the card with the "J" tab. You can then file the cards according to date and to find Mr. Jones' card, it is only necessary to refer to the row of "J" tabs until the right card is found.

Second—Another method contemplates the use of a simple adjustable metal tab which can now be obtained from almost any stationer. These metal tabs can be placed on the cards at any point and removed at will. The cards may be without tabs, but across the upper edge there should be printed a series of numbers from 1 to 31.



The diagram shows a business card with a metal tab at the top. The tab is labeled with numbers 1 through 31. The card has several fields: NAME, ADDRESS, DATE INVOICE, DATE DUE, and STATEMENT. The word FOLIO is on the right side of the NAME field. The word TERMS is on the right side of the DATE INVOICE field. A wavy line is drawn across the bottom of the card, starting from the left edge and ending at the right edge.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
NAME																FOLIO															
ADDRESS																															
DATE INVOICE																TERMS															
DATE DUE																															
STATEMENT																															

These numbers are intended to represent the days of the month. If a card will require attention on the 16th of the month, one of these metal tabs is placed over No. 16, and the card may then be filed in an alphabetical index under the name of the customer.

The card of any customer is then quickly located and the tabs themselves indicate just what cards should receive attention each day. These metal tabs may also be used to advantage in books. Ledgers are sometimes arranged with one of these daily indexes across the top of the sheet and the tabs are placed in a position to show when the accounts are due.

Short Cuts for Users of Printing.

THE average business man knows very little about buying printing. He takes the printer's word for it in the majority of cases, with the natural consequence that he knows nothing about whether he is being overcharged or not. Going on the general principle that "there is no bottom to the price of printing," he either makes the error of depending on low price as a criterion and therefore yielding the temptation of paying less than a thing is worth, and putting the printer in the position of giving him less than he pays for; or, with the idea of getting as far away from error as possible, he overpays.

The buyer of printing should know something about paper stock; he should know something about the prices of paper, and a few simple rules about how to make up a book so his catalogue may be put up in decent shape.

NUMBER OF WORDS IN A SQUARE INCH.

In calculating the amount of space the manuscript will occupy, the following little table will prove accurate enough for ordinary estimation:

WORDS TO SQUARE INCH.

Pearl, leaded	50
Pearl, solid	69
Nonpareil, leaded	34
Nonpareil, solid	47
Minion, leaded	27
Minion, solid	38
Brevier, leaded	23
Brevier, solid	32
Bourgeois, leaded	21
Bourgeois, solid	28
Long Primer, leaded	16
Long Primer, solid	21
Small Pica, leaded	14
Small Pica, solid	17
Pica, leaded	11
Pica, solid	14
English	11
Great Primer, solid	7
Double Small Pica	4

THE SIZE OF AN EM.

In measuring type the printer charges so much per em in everything excepting display job work. This price per em is computed by a standard of measurement adopted by printers. An em is the square of the letter m of the size of type used in the composition.

SHIPPING TAGS.

In ordering shipping tags it is well to specify sizes already in stock, as otherwise there will be an extra charge for special manufacturing. The following table shows the standard sizes:

	INCHES.
No. 1	1 $\frac{3}{8}$ x 2 $\frac{7}{8}$
No. 2	1 $\frac{3}{4}$ x 2 $\frac{3}{4}$
No. 3	1 $\frac{7}{8}$ x 3 $\frac{3}{4}$
No. 4	2 $\frac{1}{8}$ x 4 $\frac{1}{4}$
No. 5	2 $\frac{1}{2}$ x 4 $\frac{3}{4}$
No. 6	2 $\frac{5}{8}$ x 5 $\frac{1}{2}$
No. 7	2 $\frac{7}{8}$ x 6
No. 8	3 $\frac{1}{8}$ x 6 $\frac{1}{4}$

TABLE FOR ORDERING RULED HEADINGS SUCH AS BILL HEADS,
LETTER HEADS, ETC.

RULED HEADS.

	Nos.	Size in inches	Rul. Pens	No. Cut Full R'm	Size Cut From
Bill Heads.....	2's	8 $\frac{1}{2}$ x 14	4	1,000	14 x 17
Bill Heads.....	3's	8 $\frac{1}{2}$ x 9 $\frac{1}{2}$	4	1,500	14 x 17
Bill Heads.....	4's	8 $\frac{1}{2}$ x 7	4	2,000	14 x 17
Bill Heads.....	6's	8 $\frac{1}{2}$ x 4 $\frac{3}{4}$	3	3,000	14 x 17
Bill Heads.....	8's	8 $\frac{1}{2}$ x 3 $\frac{3}{4}$	2	4,000	14 x 17
Letter Heads.....	4's	8 $\frac{1}{2}$ x 11	7	2,000	17 x 22
Letter Heads.....	4's	8 x 10 $\frac{1}{2}$	7	2,000	16 x 21
Mem. Heads.....	8's	8 $\frac{1}{2}$ x 5 $\frac{1}{2}$	7	4,000	17 x 22
Packet Note Heads.	8's	6 x 9 $\frac{1}{2}$	5	4,000	19 x 24
Com. Note Heads...	8's	5 $\frac{1}{2}$ x 8 $\frac{1}{2}$	5	4,000	17 x 22
Statements.....	8's	5 $\frac{1}{2}$ x 8 $\frac{1}{2}$	3	4,000	17 x 22
Statements, short...	12's	5 $\frac{1}{2}$ x 5 $\frac{1}{2}$	3	6,000	17 x 22
Statements, long...	6's	5 $\frac{1}{2}$ x 11	3	8,000	17 x 22
Statements, H. & T.	8's	5 $\frac{1}{2}$ x 8 $\frac{1}{2}$	3	4,000	17 x 22
Statements, Infant..	24's	6 x 3 $\frac{1}{2}$	3	12,000	19 x 24
Statements, Yankee.	12's	8 $\frac{1}{2}$ x 3 $\frac{3}{4}$	3	6,000	17 x 22

Sometimes the office man in ordering ruled headings will make an odd size that requires a great waste of paper in cutting up the stock. The appended table will be useful in assisting him to place his order.

In the foregoing table it will be seen that the ruling is noted as the number of "pens." A "pen" is the unit of measure by which distance between the lines is measured. This will be found standard, and is adopted by printers throughout the United States.

EMS IN A SQUARE INCH.

In setting up descriptive matter for advertisements, especially in long descriptions, the printer generally charges so much per thousand ems. It is essential therefore for the advertiser to know how to measure up his copy to be able to O. K. the bill. Measure the width of the matter, then the length of it; that will give you

Square Inch	4½ Pt. Diamond	5 Pt. Pearl	5½ Pt. Agate	6 Pt. Nonpareil	7 Pt. Minion
1	256	208	176	144	106
Square Inch	8 Pt. Brevier	9 Pt. Bourgeois	10 Pt. L. P.	11 Pt. Small Pica	12 Pt. Pica
1	81	64	52	44	36

the number of square inches; multiply the number of square inch by the number of ems in a square inch according to the following table, first getting the size of the type from the printer.

SIZES OF ENVELOPES.

Envelopes come in the following standard sizes, and any manufacturer handles these sizes:

Inches	Inches	Inches
No. 2 $2\frac{1}{2}$ x $4\frac{1}{2}$	Baronial	Pay
" 3 $2\frac{3}{4}$ x $4\frac{3}{4}$	No. 4 $3\frac{5}{8}$ x $4\frac{5}{8}$	No. 2 $2\frac{1}{4}$ x $4\frac{1}{4}$
" 4 $2\frac{7}{8}$ x $5\frac{1}{4}$	" 5 $4\frac{1}{8}$ x $5\frac{1}{8}$	Policy
" 5 $3\frac{1}{8}$ x $5\frac{1}{2}$	Coin	No. 9 $4\frac{1}{4}$ x 9
" 6 $3\frac{3}{8}$ x 6	No. 1 $2\frac{1}{4}$ x $4\frac{3}{4}$	" 10 $4\frac{1}{2}$ x $9\frac{3}{4}$
" 6 $\frac{1}{4}$ $3\frac{1}{2}$ x 6	" 2 $2\frac{1}{2}$ x $4\frac{3}{4}$	" 11 $4\frac{3}{8}$ x $10\frac{1}{2}$
" 6 $\frac{1}{2}$ $3\frac{1}{2}$ x $6\frac{1}{4}$	" 3 $2\frac{7}{8}$ x $4\frac{7}{8}$	" 12 $4\frac{3}{4}$ x 11
" 6 $\frac{3}{4}$ $3\frac{5}{8}$ x $6\frac{1}{2}$	" 5 $3\frac{5}{8}$ x $5\frac{3}{8}$	Portfolio
" 7 $3\frac{3}{4}$ x $6\frac{3}{4}$	Drug	No. 1 $4\frac{3}{8}$ x $8\frac{7}{8}$
" 8 $3\frac{5}{8}$ x $8\frac{3}{8}$	No. 1 $1\frac{3}{4}$ x $2\frac{7}{8}$	" 3 $6\frac{1}{8}$ x $9\frac{1}{4}$
" 9 4 x $8\frac{7}{8}$	" 2 2 x $3\frac{1}{2}$	" 4 $6\frac{1}{2}$ x $9\frac{1}{2}$
" 10 $4\frac{1}{2}$ x 9 $\frac{1}{2}$	" 3 $2\frac{1}{4}$ x $3\frac{5}{8}$	Safety Express
" 11 $4\frac{1}{2}$ x $10\frac{1}{2}$	Photograph	No. 9 $3\frac{7}{8}$ x $8\frac{7}{8}$
" 12 $4\frac{3}{4}$ x 11	Cabt. $4\frac{1}{2}$ x $7\frac{3}{4}$	" 10 $4\frac{1}{4}$ x $9\frac{1}{4}$
" 14 5 x $11\frac{1}{2}$	Imp'l $5\frac{3}{8}$ x $7\frac{1}{2}$	

The quality of an envelope depends entirely upon the quality of paper. The X is 40-pound paper; XX 50-pound paper; XXX 60-pound paper, the size of the sheet being $22\frac{1}{2}$ x30 out of which envelopes are cut.

SCALE OF SIZES OF CUT CARDS.

Nos.	Sizes in Inches	No. Cuts to Sheet	Sheet Required to cut 1000 cards
1	3 x 1 $\frac{5}{8}$	112	9
2	$3\frac{1}{2}$ x 1 13-16	98	11
3	3 7-16 x 2 1-16	80	13
4	$3\frac{3}{4}$ x 2 1-16	70	15
5	$3\frac{1}{4}$ x 2 5-16	63	16
6	4 x 2 5-16	55	19
7	4 x 2 9-16	50	20
8	$4\frac{1}{4}$ x 2 9-16	43	21
9	$4\frac{3}{8}$ x 2 13-16	42	24
10	$5\frac{1}{8}$ x 4	36	25
11	$5\frac{3}{8}$ x $3\frac{3}{4}$	32	32
12	3 8-16 x 1 13-16	38	12
13	4 x 2 1-16	60	17

Card board comes in sheets 22x38in size, and different sizes of cards are cut from these sheets. The following table will show how these cards are cut and the number that can be cut of the different sizes from each sheet;

also the number of sheets required to furnish 1000 cards of each size.

It is of advantage to the user of printing sometimes to buy his own stock which he can often do at a considerable discount from the wholesaler or manufacturer.

STYLE OF ENGRAVING IN GENERAL USE IN ADVERTISING.

There are four styles of engravings in general use in advertising,—half-tones, zinc etchings, electrotypes and stereotypes.

HALF-TONES.

Half-tones are made direct from photographs or other copy and are exact reproductions in black and white of the copy. The half-tone is reproduced by a mechanical process whereby in transferring the photograph to a copper plate the photograph is made through a screen. On all half-tones will be noticed the little dots and lines which is the screen used in the reproduction. For use in newspapers the half-tone is made through a 65-line screen, or at most a 75-line screen, will give the best results. For ordinary magazines printed on a superfinished paper a 110 or a 120-line screen may be used. For highly enamelled paper 130 or 150-line screen is generally used. Screens, however, are made up to as high as 300 lines. As the screen gets finer the result is softer and more difficult to print, requiring that the very highest grade of enamelled paper be used for the 200-line screen.

Half-tones are generally used for reproduction of photographs, wash drawings, oil paintings, photogravures and steel engravings. The copy from which the half-tone is made must be absolutely free from all cracks, spots or other defects as the half-tone is a photographic reproduction of the copy.

ZINC ETCH-NGS.

A zinc etching is the simplest mechanical method of reproducing copy. It will not take copy, how-

ever, like photographs where there are many half tones, or light shadows. Zinc etching will simply reproduce black and white and no gray effects can be obtained, therefore copy for zinc etching should be made in what is known as line drawing. It will reproduce black lines or black dots, but not wash or photographic half-tones. The copy should always be made in black and white and not in any other color as zinc etchings are made from photographic wet plates which will not take pink or blue or any of the colors of the spectrum so well as it will take arbitrary black.

ELECTROTYPES.

Electrotypes are simply either a reproduction of half-tone or zinc plate made by means of a mold being made of the original and then the metal being poured into the mold and a reproduction being made that way.

STEREOTYPES.

Stereotyping is the cheapest method of reproducing from plates. Cuts from which stereotypes are to be made should always have metal base. Stereotypes are frequently used in newspaper advertising.

COST OF ENGRAVINGS.

Half-tones cost from 20 to 25c a square inch: the minimum price of small cuts being from \$2 to \$3.

Zinc etchings cost from 5 to 7c per square inch: the minimum price of small plates is from 50 to 75c.

Electrotypes cost from 2 to 4c per square inch: the minimum price of small cuts being from 10 to 15c.

Stereotypes cost from 1 $\frac{3}{4}$ to 3c per square inch: the minimum price of small cuts being 8c to 12c per small cut; 50 per cent additional is usually charged for metal bases.

FORM OF PAGE FOR CATALOGUES AND BOOKLETS.

Many advertisers would be very much surprised to know that the reason their catalogues did not look more attractive is because of a lack of symmetry in the make-up of the pages. It is a well accepted rule that the page should be arranged so that:—the diagonal measure of a page from the folio in the upper corner to the opposite lower corner should be just twice the width of the page. As Bigelow says: "This is no arbitrary technical rule, but is in conformity to the law of proportion establishing the line of beauty; it applies equally to all objects of similar shape, and satisfies the eye completely. A long-brick shaped page or book will not look well, however nicely it may be printed. When we come to a quarto or square page, the true proportion of the diagonal to the width will be found to be as $10\frac{1}{2}:6\frac{3}{4}$ —the size of a good shaped quarto—instead of $2:1$, as in the oblong, or octavo. And this shape also proves as satisfactory to the eye as the former one. However large or small the page may be, these proportions should be maintained for a handsome book."

BOOK PAPERS.

ANTIQUE FINISH.

Antique Book is very spongy with a dead finish that is without gloss. In the majority of instances it is used in order to make a work look bulky. A book that is printed on Antique finish has bulk and lightness. You cannot use this kind of paper to print half-tones or fine engravings, but coarse wood cuts or zinc etchings can be printed acceptably on it.

LAID FINISH.

This paper is made with bars or lines like water marks running through the sheets. This finish offers very poor printing surface for fine half-tones or zinc etchings.

ENAMELLED FINISH.

Enamelled finish is a very high, glossy surface, intended primarily for printing half-tones. This surface is made by a coating of clay, chalk or other mineral substances, and furnishes a hard, brittle paper of no particular durability, but capable of taking a fine half-tone or zinc etching.

S. AND C. FINISH.

(Sized and Calendered.)

This paper is sometimes called M. F. Book; otherwise known as Machine Finished. Its surface is smooth without a gloss, and is used principally for the commoner grades of book work and will take a zinc etching nicely, but will only take a coarse screen half-tone.

S. AND S. C. FINISH.

(Sized and Supercalendered.)

This approaches the enamelled stock in grade, having a hard finish with a glossy surface.

In order to detect the finish of a paper make a cylinder of it so the light will reflect on the surface of the cylinder. If it is an enamelled stock it will show up strong reflections, smooth, hard, and very glossy and if it is any of the other grades, it will appear less glossy, until in the Antique finish you will get little more than the effect of soft cloth.

TERMS FOR SPECIAL POSITION OF ADVERTISEMENT.

In ordering advertisements inserted in magazines and publications in specifying the position, it is not necessary to write a long letter of instructions. The following abbreviations are sufficient to show the location desired:

N. T. R.—next to reading matter.

O. A. P.—only ad on page.

T. P. N. R. M.—top page next to reading matter.

T. C. R. M.—top column, next to reading matter.

F. P.—full position—i.e., wholly along side of reading matter, top of column, or following reading in a broken column.

R. P.—run of paper, which means no position specified.

P. P.—preferred position, nearly the same meaning as full position.

MEASUREMENT OF ADVERTISING SPACE.

Advertising space is measured almost uniformly in Agate type, fourteen Agate lines unleaded making one inch. Nonpareil is sometimes used, twelve unleaded Nonpareil lines making one inch.

STANDARD COLUMN WIDTHS.

The standard measurement for newspaper columns is 2 1-6 inches wide, or 13 pica ems. Some of the magazines such as "The Ladies' Home Journal" and "The Youth's Companion" are $2\frac{1}{4}$ inches wide, or $13\frac{1}{2}$ Pica ems. The standard magazine column is $2\frac{5}{8}$ inches wide or 16 Pica ems. Electrotypes to be used in both magazines and newspapers should be made the narrowest measure, unless it is deemed wise to incur the extra expense.

SIZES OF POSTERS.

Posters come in sheets. The standard size of a sheet is 28x42 inches.

STREET CAR CARDS.

The standard size of street car cards is 11x21 inches. They are generally cut from stock 22x42 inches.

TO CALCULATE THE WEIGHT OF PAPER.

Paper is sold almost universally by the weight per pound, and is put up in bundles of five hundred sheets which is called a printer's ream. These reams weigh according to the unit of the weight of the paper—for instance, a 25 x 38 enamelled paper may weigh 60 pounds, or 70 pounds or 80 pounds and so on to any spe-

cial weight, 25×38 being the size of the sheet, and it takes 500 sheets to weigh 60 pounds; if the paper were a little heavier, the same number of sheets the same size would weigh 70 pounds and so on up to any special weight.

It is oftentimes necessary, however, for the buyer of paper to be able to calculate what a ream of paper 32×44 of the same relative weight of a sheet of paper 25×38 , would cost. Divinne has given a very good rule on this subject. "When paper of irregular sizes must be ordered, and it is important to retain a certain thickness, as in the case of enlargement of a form of ordinary 24mo. to 32mo., or in case of a reduction to a 16mo., the proper weight of the size wanted may be determined by a simple calculation, thus: The difference between 24 and 32, or between 24 and 16, is 8, or eight twenty-fourths, or one-third. The size of paper wanted should weigh one-third more for the thirty-two page form, or one-third less for the sixteen-page form.

When the proportion between the sizes is not regular, as in the above case, the desired weight may be found by reducing both sizes (the paper in use, and the paper desired) to square inches, making a question in simple proportion. For example: To find the weight of a ream of paper 20×30 inches, as a ream 24×38 inches, weighing 40 pounds. Multiply together the length and width of the smaller size, 20×30 912:600::40 which gives 600 square inches. Multiply the length and width of the larger sheet, 24×38 , which gives 912 square inches. It is now a simple question of proportion. As 912 is to 600, so is 40 to the answer, which is $26 \frac{1}{3}$."

$$\begin{array}{r}
 912:600::40 \\
 \hline
 912)24000(26 \frac{1}{3} \text{ lbs.} \\
 \underline{1824} \\
 5760 \\
 \underline{5472} \\
 288, \text{ or about } 2 \frac{2}{3}.
 \end{array}$$

Checking Returns on Form Letters.

WHERE inquiries are answered by form letters, the follow-up system will require that where the letter in answer to the first inquiry fails to get an order, the name will then be put in the follow-up file, and a second letter will then be sent to that inquirer together with a number of others in rotation certain periods apart. In order to find out what certain form letters are producing, it is the best practice to make out a form letter card ruled somewhat as shown opposite.

Form Letters and Form Paragraphs.

ANY one dictating a large number of letters will find upon reflection that he is using a constant succession of sentences applicable to certain situations which arise from time to time, constantly repeating the same sentence each time the situation occurs.

A little thought will enable the correspondent to pick out a large number of these paragraphs which may be copies in duplicate, one copy being retained by the correspondent and one copy handed to the stenographer. The paragraphs are then lettered or numbered and in dictating a letter any paragraph is inserted in its proper place in the letter, being indicated to the stenographer by its number only. Fully one-half of the ordinary run of letters can be handled in this way.

A form letter should be clear, concise and to-the-point and should give definite information. It is extremely unprofitable to cut a form letter so short that it lacks that element of complete information for which the possible customer is asking. It is absolutely absurd to say that form letters should be but a page in length. It has been found that form letters containing as much as twenty-five hundred words have proved very much more effective and profitable than letters containing but three hundred words.

In the mail order business the great majority of the

Record of Form Letter

List used from _____

Month	Number	Cost	Orders	Cost per order	Total Business
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Summary					

business is obtained by the personality displayed in form letters. Personality in salesmanship is the element that makes sales, so salesmanship in form letters is the element that brings orders.

A series of form letters covering the different requirements of the correspondents should be arranged and keyed and numbered in such a fashion as not to interfere with the impression that they are personally dictated; as the vast majority of mail order correspondents resent being treated as a mass. Therefore, form letters should be arranged, for instance, where the word "Dictated" with the initials of the party dictating and those of the stenographer are generally placed, *i. e.*, "Dict. H. C.—M. R.," something like the following: "Dict. H. C.—M10." The "M10" is used as the key number of the particular form letter, so that the correspondence clerk in answering takes the inquiry, marks "M10" on it, and hands it to a typewriter to fill in the name and address. This saves the time of dictation and insures a uniform excellence in the replies.

Indexing Form Letters and Form Paragraphs.

FORM letters should be arranged in loose leaf scrap books and a complete set furnished to each clerk, stenographer, manager or typewriter handling inquiries.

From time to time it will be necessary to substitute new forms for old ones. The old forms can easily be removed from the loose leaf book and new ones inserted.

Form paragraphs can be numbered 1, 2, 3, etc., and in answering such inquiries the correspondence clerk can mark on the inquiry, Paragraph 1, which would be the ordinary form of acknowledgment, and then Paragraph 15, 26 and 33, (dealing with the subject of the inquiry) and ending with Paragraph 2, which may be the ordinary form of closing.

The paragraph idea, of course, applies to a method

of answering letters where each answer is especially typewritten.

Form letters may be printed in imitation of type-writing so cleverly done that it is almost impossible to detect the difference between the printed letter and the especially dictated letter.

It pays to have the letter bear all the ear marks of personal dictation, even though it means a considerable relative additional cost.

Keying Advertisements.

KEYING advertisements is the modern method of finding out just what a particular line of publications, or what particular publication of a number is bringing the best returns from a certain advertisement.

There are several ways of keying an advertisement. One is making a special offer and attaching a coupon to the ad, requiring that the coupon be filled out and sent in before the special offer is good. This coupon contains a statement of where the ad was taken from. The coupon idea, however, is only useful in comparatively large spaces, such as pages or half-pages in the magazines, or proportionately large spaces in the newspapers. The coupon pays better in the magazines.

Some advertisers key their ads by changing the street address on each ad. This, in case where a large number of publications of similar circulation are used, is rather deceptive in determining results for the simple reason that the possible customer in answering the ad may be influenced by magazines which do not get the credit for their work, and it has the additional drawback in such cases of arousing suspicions of possible customers.

Others change the number of the rooms in the building which they occupy.

Others request the possible customer to address a different department. This is being used by a number of the larger concerns.

Probably the best way to key an ad is to make a special offer in each magazine, so differentiating the offers as to give a complete index to the magazines bringing the most replies. It has one important drawback however, of not putting all the magazines on the same plane.

Up-to-Date Method for Record of Purchases.

WHEN supplies are required a regular order is made out and the order is also entered on the loose leaf purchase record, which is placed in a file indexed with guide cards for each kind of supplies used. This file is divided into three compartments, namely:

Goods Ordered.

Goods Received.

Bills Audited for Payment.

When the bill is received the items and extensions are checked with the order, and the date of receipt of bill is inserted in the purchase record, together with the quantity and amount according to the bill to which the purchase record is attached. When the goods are received, the bill is stamped with a rubber stamp calling for date received, freight, express, or cartage.

The bill and purchase record are now transferred to the "goods received" compartment. These bills are then audited for payment on the last day of the month and placed in the "audited" compartment, a recapitulation being made of the amounts, the total of which is credited to accounts payable account in the general ledger. The recapitulation sheet also contains the distribution to the various representative accounts, to which the totals of the various columns are posted. No accounts with creditors are carried in the ledger. Wherever bills are regularly discounted, and paid at certain fixed dates, it is a waste of time to open separate ledger accounts with each concern from whom purchases are made. The paid bills attached to the vouchers should be placed in vertical files, and as all the bills emanating from one house will be filed

together immediate reference can be obtained whenever desired. It will be seen from our illustration that the purchase record is a duplicate of the order for the goods and bears the same number. In businesses where it is preferred to carry ledger accounts with creditors, this system could be advantageously adapted, as posting could be made direct from the purchase record without the intervention of any other book, the order number supplying the place of book folio.

It will be seen from this description that the invoices received cannot only be referred to, but information can be obtained at a glance as to whether the bill of goods has been received; as to whether the goods are according to order, and the bill correct; and as to whether the bill has been audited or paid; and as a matter of fact, no extra time has been consumed because it is just as easy to place the bill in one file after reference has been made to it as to place it in the file in which it was originally contained.

The Envelope System for Indexing Clippings, Data, &c.

HOW many times has the busy business man said to himself: "I saw an article in the magazine about that thing the other day. I wish I could remember where it was I saw it for it had a direct bearing on just this subject." Of course, you read the trade papers applying particularly to your own trade of business. You read *The Book-Keeper and Business Man's Magazine* to gain information about things and general business procedure. You do these things for the sake of the information you gain, why not index all the information you come across in such a fashion that it will be constantly available for your use whenever you desire to call for it. To do this, that is, to render it constantly available, it is simply necessary to cut out all of the articles which attract your special attention or if you do not desire to mutilate the magazine in which you find

the article hand it over to your stenographer to be copied on the typewriter and after you have cut the article out or after a copy has been made it is ready for filing. A series of envelopes lettered with the various letters of the alphabet will answer if you do not expect to accumulate a very large stock of clippings but in order to make the whole subject matter of these clippings constantly available from any standpoint it is well to use a card index for cross indexing the subjects dealing with the various clippings. As time goes on you will find that the envelopes used to preserve the clippings are divided into smaller and smaller divisions and as a consequence your cross index will grow in accordance. We will say that you are the head of a large mercantile institution having special control of the collections, you find an article in some magazine or newspaper dwelling upon the legal features in connection with a replevin suit in the state of Ohio. These clippings would naturally be filed in the envelope devoted to law which envelope in its turn might well be subdivided into alphabetical division, your card index showing that any particular clipping you desire should be found under the head of replevin subdivided R. in the legal envelope. The best way to cross index all these subjects is to give them their title from the way in which they are the most easily brought to your mind when you read the article, in other words ask yourself how would I refer to this if an inquiry regarding it came to my mind a little later on.

System for Recording Advertising Results.

Each publication should have a card made out for it along the line of the following form:

The key number, or the method of keying the ad should be incorporated in the statement of the contract and the correspondence clerk should be required to keep an accurate record of inquiries, orders or correspondence produced by the advertisement. At the end of each

Publication Summary Record.						
Publication _____						
Address _____						
Advertisement Copy _____						
Key No. _____ Frequency _____						
Month	Size	Cost	Inquiries	Cost Followup	Orders	RECAPITULATION Cost per Order Cost per Inquiries Total Business
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
Summary						

month a summary record should be made according to the form on opposite page.

In this way the advertising manager is enabled to keep constantly before him the exact results obtained from his advertising campaign not only as to the value of the mediums concerned, but the relative value of different offers in different advertisements.

Some Correspondence Time Savers.

GETTING THE LETTERS READY TO ANSWER.

MUCH time can be saved by a correspondent, both for himself and his stenographer, if the correspondence is properly arranged before calling the stenographer to take the dictation.

When the mail comes to the desk it should be carefully read and those letters which can be answered at once placed by themselves. The letters on which additional data is required should be laid aside and complete information necessary to an intelligent answer obtained before they are placed with those which are ready for answer. Then when the stenographer is called the letters may be dictated without interruption and the time of the stenographer is not wasted in waiting for the information to be obtained.

A Novel Way to Emphasize in Typewritten Letters.

IN some of the new and improved "Visible writing" machines it is possible to produce a novel and attractive effect by printing a word, line, or sentence in vivid red while the body of the letter is green, purple, or blue.

This is done by inserting a slip of red carbon paper behind the ribbon at the time the emphasized words are written, removing the carbon as soon as those words are finished.

Getting Correspondence Data.

WHERE there are several persons employed in an office it is a mistake to require the stenographer to spend his or her time in looking up minor details necessary to answer a letter. That duty can be more profitably delegated to an employe whose time is less valuable. For instance if a letter is required from the files, it is better to send the office boy to the file clerk to get the letter. When information about an account is wanted, make a memo. on the letter and send to the accounting department with instructions to return as soon as possible. It is not always possible for the accountant to furnish the desired information at once without serious interference with work which he is doing.

Except in unusual instances, the business will be better served all around if the information is allowed to come through in regular routine. There is no use in having the stenographer attempt to look up details with which someone else in the office is much more familiar.

Dictating by Numbers.

ONE of the best time savers in dictating is to designate each letter by a number. When the correspondence is taken up for reply, number the letters beginning with number one. Instead of giving the stenographer the name and address call the number of the letter which the stenographer will enter in the note book. If a numbering machine is used the series may be continued throughout the day, otherwise it is better to begin with number one each time the stenographer is called to the desk.

In handling ordinary business correspondence the writer has found that about twenty per cent of the time is saved where the stenographer does not stop to write the name and address. When the fact that this means the saving of the time of both the correspondent and the stenographer is considered, it will be seen that an economy worthy of consideration results from the scheme.

Making Corrections.

WHEN corrections are to be made in a letter the stenographer is aided to a considerable extent by properly indicating the corrections. If a word is to be erased and another substituted draw a light line under the word and on the margin at the end of the line write the word to be substituted and place the proofreader's sign, meaning the word is to be killed. The correction can then be made without re-writing the entire letter. In case of a misspelled word it may be indicated by a line underneath and the correct spelling written at the end of the line in which it appears.

To Save Postage.

MANY concerns, especially those having several departments, each having correspondence of their own, can save postage expense in a considerable amount by making sure that all mail matter addressed to one person during the day by every department is enclosed under one cover. To do this it is only necessary to provide the mailing clerk with a supply of envelopes addressed to those parties with whom the firm is in constant correspondence. The various departments writing letters to these parties then send their letters each day to the mailing clerk without envelopes, he enclosing them in the same envelopes at the close of the day or whenever the mail is made up.

In case of concerns having branch agencies the saving in this direction will be considerable in the course of a year, and in addition to this the receipt of all communications from the home office under one cover will be found convenient by the party receiving the mail. Much annoyance is caused at times by the placing of insufficient postage on letters for foreign countries. This can be obviated by giving the various stenographers a supply of envelopes already stamped with a 5c stamp. When writing the letter the stenographer will, of course, note that it is addressed to a foreign

country and using the stamped envelope will prevent an insufficient amount of postage, thus obviating the annoyance of delay which is sometimes fraught with grave consequences in the forwarding of important mail.

Sorting Mail for Filing.

DID you ever watch a filing clerk in an office where a large volume of mail was received, trying to sort the mail so it could be quickly filed? She probably made neat little piles of letters, some of them on the desk and a couple more in her lap, trying to get all of the Jones', Smiths' and Browns' together.

Before she gets half through she finds she has not nearly enough room to sort all the letters, so she files those that are already sorted and then proceeds to go through the same operation with the balance.

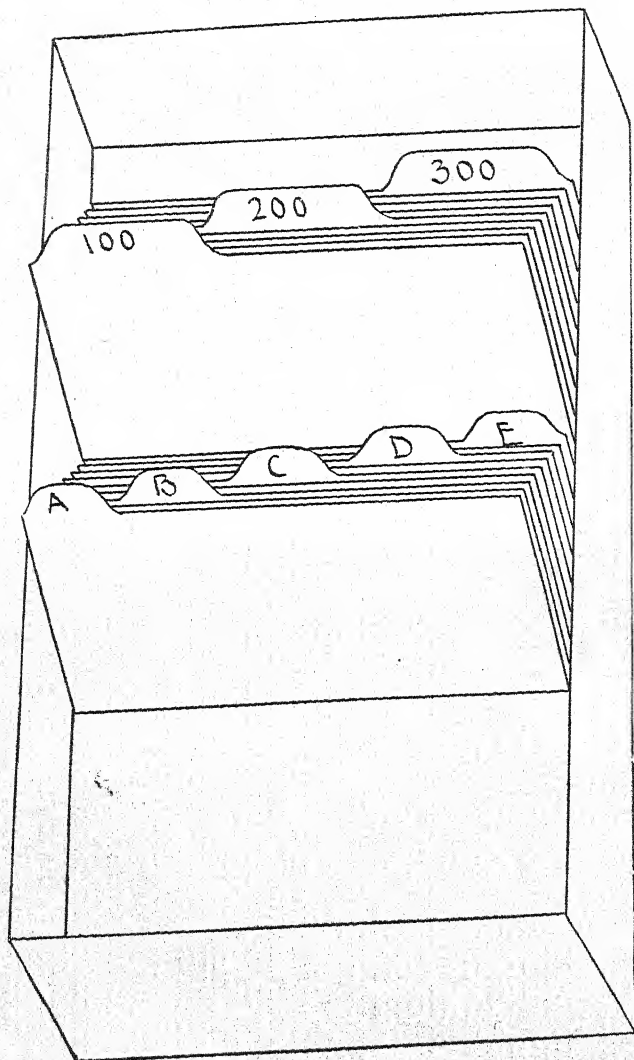
A great time saver is one of the sorting trays, such as are used with the vertical filing system. This tray is made like a card tray but very much larger. Inside it is about twelve inches wide, five or six inches high, and about twenty inches in length. Like the card trays it is provided with an adjustable follower.

By using a set of alphabetical indexes standing upright in the tray, the mail can be very quickly sorted. The "A's" are thrown in front of the "A" guide or the "B's" in front of the "B" guide and so on until the entire mail is sorted. It is then but the work of a moment to re-sort the "A's" when they are ready for filing.

If the numerical system of filing is used, these indexes should be numbered instead of lettered, one index to a hundred numbers.

Copies of Replies Attached to Originals.

WHETHER or not impression copies of letters are taken time can be saved in the end if a carbon copy of the reply is attached to each letter. This may be attached by the stenographer with a drop



of mucilage or paste. When it becomes necessary to refer to any correspondence in the files the original letter and copy of the reply are found together, giving a more complete history of the particular subject referred to.

Distributing the Mail.

IN many concerns it is the custom to deliver all mail for each department to the department head, by whom it is distributed to his subordinates. Where there is a large amount of correspondence to be referred to several different individuals it is inconvenient to distribute it on the desk and keep that for each individual by itself. To aid in a rapid distribution a desk file is a great convenience. These files, which are designed for use on the desk can be had with an alphabetical arrangement—a compartment for each letter of the alphabet—or with numbered compartments. Use the initials of the individuals or indicate each by a number and as the letters are read place each in its proper compartment. As each lot of mail is distributed, the letters can be sent to the proper individuals and all confusion avoided.

Method of Taking Care of the Cash Receipts of a Mail Order Business.

ALL mail received should be opened by one special clerk, and stamped with the date and also the hour when received. Letters containing money should be sent direct to the cashier, who enters them in a special ticket form of cash book. The pages should be large enough to contain ten tickets, perforated down the center, and next the binding and also crosswise so that the tickets can be taken out and arranged alphabetically for entry into the loose leaf ledger, or else on a card system. The book should be made with the tickets uppermost, and a plain sheet underneath, printed and ruled like the tickets above, and all tickets and duplicates numbered

the same by a hand numbering machine, and by using a carbon sheet duplicate copy is left in the book. The tickets are taken out and given to the ledger clerk and entered to its proper account, then all the tickets are arranged and passed over to the treasurer or other confidential clerk who checks over the tickets with the ledger leaf or card to see that all are posted to their proper accounts.

The cashier next draws off a list showing the ticket number and the amount, the balance on hand in the morning, plus the total footing of the sheet will give the balance on hand at night, all of which, or most of it, should be turned over to the treasurer. By this method a very strict watch is kept on the cashier, and if the mail clerk is made to number all remittances going to the cashier, with a numbering stamp, and reports the same to the treasurer, it would be almost impossible for any defalcation to occur without collusion.

A Perpetual Inventory System.

BY a very simple and inexpensive card system described herewith, which with slight alterations to suit the conditions of the stock, can be made to conform to the requirements of any business, a book-keeper or accountant having in charge the accounting department can with the co-operation of his employer submit a complete statement of this business at any time it might be called for. In the vast majority of business houses, an inventory is a job of several days and at times, weeks duration. A short cut in inventories should therefore prove of incalculable value to the up-to-date and enterprising business man. For lack of space the simplest forms of such cards is given here.

The stock card as you will note is ruled with debit and credit columns much in the same manner as a ledger card and the article represented on the card is charged with the quantity placed in stock and credited with all that is removed for sale. A blank space is left at the top

of the card for the name of the article and at the right of the card are twelve lines for balances on hand. This permits of an inventory of the goods on hand being shown once a month if so desired and in a great many business houses today a statement of profits or losses, as the case may be, is required monthly instead of the usual custom of the annual inventory.

It would be impractical, of course, to make an entry on these cards each time during the day that an article was taken out of stock, and a small blank is used for jotting down the date, article, quantity taken and by whom taken, a form being shown below. These are deposited in a receptacle conveniently placed and once a day gathered up by the person in charge of recording the

STOCK MEMORANDUM

Date _____

Article _____

Quantity _____

Taken by _____

entries on the stock cards. A competent office boy can be placed in charge of this work. A few minutes each morning is sufficient to enter them. It is advisable, of course, to sort them and enter the total of each article for the day in one sum.

The plan described is applicable to any business where the stock is made up of merchandise of considerable bulk or where the stock is not of such a nature that it is sold in broken packages. In the latter case when

entering the article on the stock card it should be charged with the number of packages or boxes placed in stock and credited with one package or box whenever broken. For instance, with a box of buttons in a retail business it would not be convenient to stop and enter each card sold, consequently when a box of that particular article is broken it should be credited on the card as one box. It is also of advantage in some lines to carry on the

STOCKKEEPER'S ORDER.

No. _____ 190_____

Please deliver to bearer the following articles:

QUANTITY	STOCK	No.

*Rec'd by**By order*

cards what would be known as reserve stock, taking from that stock each morning an amount sufficient to meet the ordinary sales for a day and making it out in a lump. These examples are merely to show that any conditions can be met by the system, and by making it a serious offense to remove from the stock any article without first making out the "stock memorandum," an accurate condi-

tion of stock is always at hand at a few moments' notice, the balance of stock on hand being taken off the cards just as the trial balance from the ledger.

If you are in a business of such dimensions as to require a regular stockkeeper and an exclusive buyer, this scheme can be elaborated to meet a threefold purpose. First, a ready inventory at one's command; second, an absolute check on a dishonest stockkeeper as well as an absolute check for the honest stockkeeper that all goods that have left his charge have been on a written requisition from a duly authorized party; a perfect buyer's guide and reference which is explained below. To conform to these conditions the stock memorandum should be made in the form of a requisition on the stockkeeper, a form very simple, and answering the purpose of the two combined, being given herewith. These should be made in duplicate, the party issuing the requisition retaining the copy, the original being filed by the stockkeeper until the time he chooses to enter it on the stock cards. By having these orders numbered and filed consecutively after they have been entered they make a valuable reference.

The stock card in order to meet the requirements mentioned above, should be ruled with spaces for the name and address of the party from whom the goods were purchased, and a space for entering the "low mark" determined upon by the buyers.

In addition to the ruling formerly shown a form is given in the accompanying illustration as an example. When a card is made for any article the buyer should enter in the space "low mark," the minimum the stock should be allowed to reach, at which point he should be notified of the fact:

Thus, it will be seen that the buyer has an ever-ready reference at hand obviating any excuse for the often repeated "I didn't know we were out."

In installing such a system it is best to commence at the time a general inventory is taken, when it would then be a matter of convenience to make out the cards from

the inventory, debiting each card with amount shown on hand at that time.

In a great many wholesale houses, where nothing whatever is taken from stock except to fill an order, and as all such houses have uniform order blanks on which all orders are made, a considerable time can be saved by having these orders go to the person keeping the stock cards before final filing. The entries on the stock cards can then be made from these orders doing away with the extra blank styled as the "stock memorandum."

A Scheme for the Solicitor.

THE successful solicitor or salesman keeps a complete list of all prospective customers. A scheme which is now largely used by insurance solicitors can be adopted to good advantage by salesmen in all lines.


When calling on a man for the first time obtain all the information possible that will be of service in making a sale at some future time and make a memo. of this on a card. A card about 3x5 inches in size is convenient

31		MAY		30	
27		28		29	
26					
NAME <i>W.A.D. Hall</i>					
ADDRESS <i>Muskegon, Mich.</i>					
BORN <i>Feb'y 14-1873</i>	AGE <i>31</i>	AGE CHANGES <i>Aug. 14-</i>	MARRIED <i>Single</i> ✓		
INSURANCE CARRIED <i>1 P't 20 P.L. Glet's</i>		POLICY PROPOSED <i>1 P't 20 yr. Exp. Prem \$56.22</i>			
CALLS <i>4/27-5/16</i>					
APPOINTMENTS <i>3/26 his office 2 P.M.</i>					
LITERATURE MAILED <i>"How and Why" 5/1</i>					
WRITTEN FOR					

for the pocket and has many advantages over a memo. book. These cards may be preserved for future use and all information about each customer is by itself instead of being hidden between a lot of other memos. of every character. When the solicitor returns to his office or hotel he can leave all cards of parties who are not to be seen for some time.

ARRANGING CALLS.

Before starting out in the morning the solicitor should arrange his prospect cards so that his calls can be made without loss of time in going back over ground



1	2	3	4	5	6	7	8	9	10
Source									
Letters / /									
1 2 3 4 5 6									

Fig. A

already covered. In a city the cards can be very easily arranged by streets so that when the solicitor is in any locality he can refer to the cards and make his calls. In soliciting, the best results can only be obtained by laying out the day's work and sticking to it. Select a territory that can be conveniently covered during the day, and do not waste time going from one part of the city to another.

ARRANGING PROSPECT CARDS.

When a prospect card is made out it should be filed in such a manner that it will not be referred to until it needs attention. The best way to arrange this is to have a small card file or tray fitted with a monthly and daily index. This consists of a set of twelve index cards printed with the months and thirty-one numbered indexes to indicate the days. Such an outfit can be obtained at any stationers. If a man is to be seen in three days—ten days—a month of three months, place his card in the proper place in the file and it will come to light at the right time.

This same sort of a file can be used to advantage by any business man for keeping track of his appointments and all matters requiring attention at a future date.

A Card System for the Credit and Collection Desk.

CONSIDERING that the time and labor spent on watching and collecting accounts of a doubtful nature is an extra expense aside from actual cost of doing business, any and all possible means of reducing such expense by way of saving time in handling those accounts should be adopted wherever the present methods can be improved upon, and a few suggestions in this connection will undoubtedly assist a great many whose duties include such work. We recommend in the following description a card system for this purpose, as there is no substitute which allows so much information to be shown at a mere glance, as can be shown with cards, using guides and tabs for indexing and cross indexing for name, address and dates on which each card requires attention. The form of card for this purpose should be a 5x8 card, having an ordinary 5x8 drawer or desk tray to contain them. The illustration shown here in reduced size, requires no explanation, it being plain as to what the several columns are intended for; the numbers at the top of the card being the date of the month on which

to place the tab, as described further on. Generally the credit man looks over the monthly statements given him by the book-keeper, and lays to one side all statements requiring his attention. When he has done this and is ready to write a letter accompanying them or inclose a notice of draft, his stenographer should have a supply of the cards in a convenient place. He can be instructed to fill in the card and make notations in accordance with the letter or notice which is sent with each statement. It will be seen that in the course of two or three months it would be seldom necessary to make out new cards, only as a new account requires special attention. If the accounts of this nature are of sufficient number, it will be found most convenient to index the cards by states and towns, otherwise indexing them alphabetically by names of debtor only, will be sufficient. When a letter is written a card should immediately be made, where there is none already in the file and the proper entries inserted in the several columns; for example: John Doe on the first of June owes a balance of \$245, and the credit man merely asks for a remittance on the 10th following: The stenographer makes the entries on the cards as follows:

2	4	6	8	(10)	12	14	16	18	20	22	24	26	28	30
NAME _____										Ledger Folio _____				

Date	Balance	Pay-ments	Letters	Drafts	Remarks:									
6-1-'04	\$245.00		6-2		Asked to Remit									

It will be noted that a tab is put on the cards at the point numbered 10. This indicates from the top of the card that the account needs attention again on that date. By cutting out a card of stiff board the same width but 3-8 inch higher than the record cards and numbering on the top edge corresponding to the numbers on the cards, it will be of great assistance in noting the dates on which the tabs are placed. For further convenience, by using two different colors of tabs, say blue for "attention" and red for "draft," it will not be necessary to look at the cards themselves to see on which ones drafts are to be made or to go to the credit man for letter only. For example: Had the credit man written Mr. Doe that he would draw on him for \$50 on June 10th, the stenographer would make the following entry on the card, using a red tab.

2	4	6	8	(10)	12	14	16	18	20	22	24	26	28	30
NAME _____										Ledger Folio _____				

Date	Balance	Pay- ments	Letters	Drafts	Remarks:									
6-1-'04	\$245.00		6-2		Draw 10th, \$50.00									

Thus on the 10th this card and all others bearing the red tab on that date, should be removed and given to the book-keeper, who should refer to his ledger and if no payments have been made, draw for the amount noted on card. If any payment or payments have been made, he should enter them in the proper column, showing the date and amount of each and return to the credit man.

The same course should be taken regarding cards tabbed for "attention," it being the stenographer's business or whoever may be designated by the credit man, to see that all cards tabbed are given to the book-keeper promptly on the day indicated, he in turn inserting any payment, that may have been made since the date of the last balance shown on card, and handing them in to the credit man.

In conjunction with this system it is sometimes desirable to have all correspondence at hand when writing a customer regarding his account and a great deal of time is expended in most houses in hunting through the general files among a vast amount of other papers and correspondence for the desired letters. If, therefore, a small file is used in which to keep all live collection correspondence a great deal of time is saved in this direction. This file should be indexed exactly as the cards are indexed. That is, if the cards are indexed by states and towns, the correspondence should be filed in accordance, or if the business is not of such dimensions that there is an advantage gained in indexing in this manner, it is better to index and file both alphabetically by names of the customers. When the correspondence is kept separately in what would be styled the "Collection File," for attention, it is but a few minutes' work when cards are taken out to secure the correspondence with each customer represented on such cards and attach each card to the correspondence belonging to it with a small clip, until it is ready to go back into the proper place.

While a great many accounts in any business need special attention, they are not necessarily bad accounts and the collection cards being ruled for twelve months, the new balance being entered each month, the card with its references becomes a very valuable adjunct to a credit man's records and when filled requiring a new card to be made, should be filed with the credit references regarding the account.

"The Office Man's Time."

A "TIME SAVER" which borders upon the ridiculous was recently published in a leading magazine.

We have all experienced the annoyance of the caller who outstays his welcome—in other words, the bore—the man who does not know how to quit. The story, told at the bore's expense, is as follows:

An office man was entertaining a caller—an intimate friend—one day and during the course of the conversation he said: "Do you see that office boy of mine? He has the greatest scheme you ever heard of. He is a bright little fellow and can 'spot' a bore as far as he can see one. When one of that ilk comes into my office this boy will give him about so much time and then, coming into my office say apologetically 'Mr. Jones, have you overlooked that engagement you had at 2:45, (or 4:10 naming a time about 5 or 10 minutes ahead.) This gives me a chance to get rid of the undesirable visitor without offense—great scheme—isn't it?"

The visitor assented heartily but had no sooner done so than the office boy appeared, holding his watch in his hand, saying: "Mr. Jones; have you overlooked your 11:35 appointment?" The rest must be imagined—but the bore left the office.

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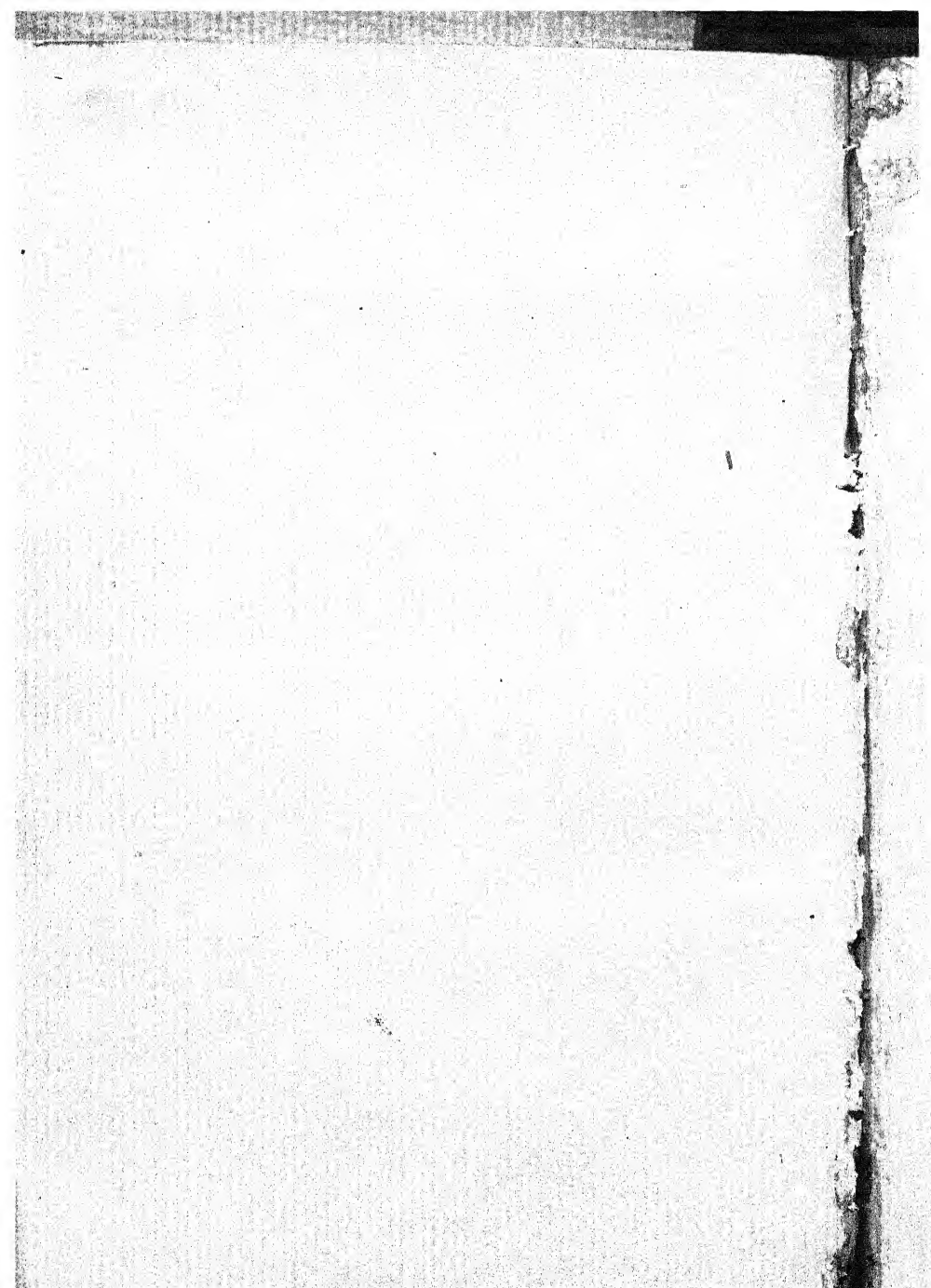
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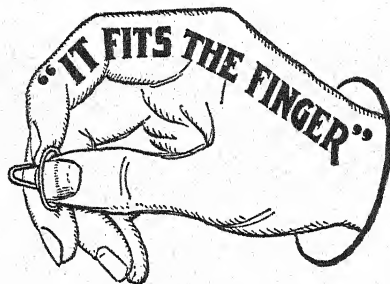
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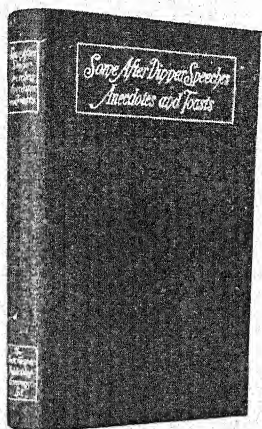
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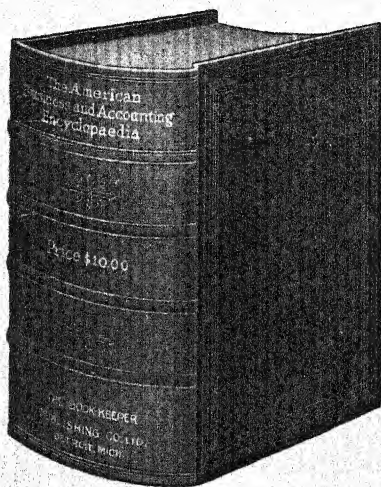
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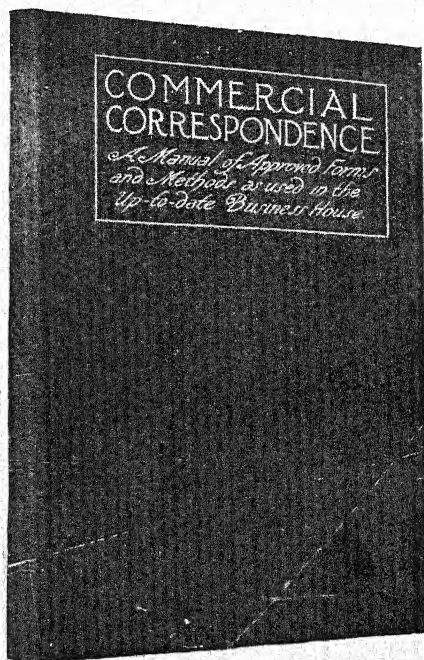
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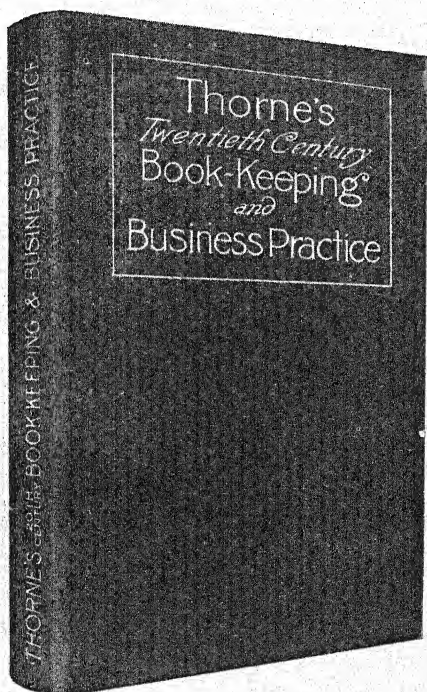


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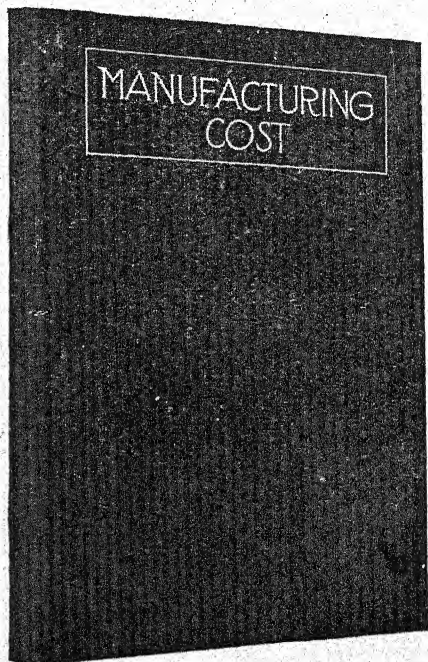
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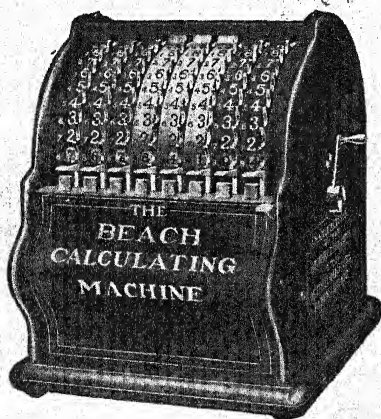
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